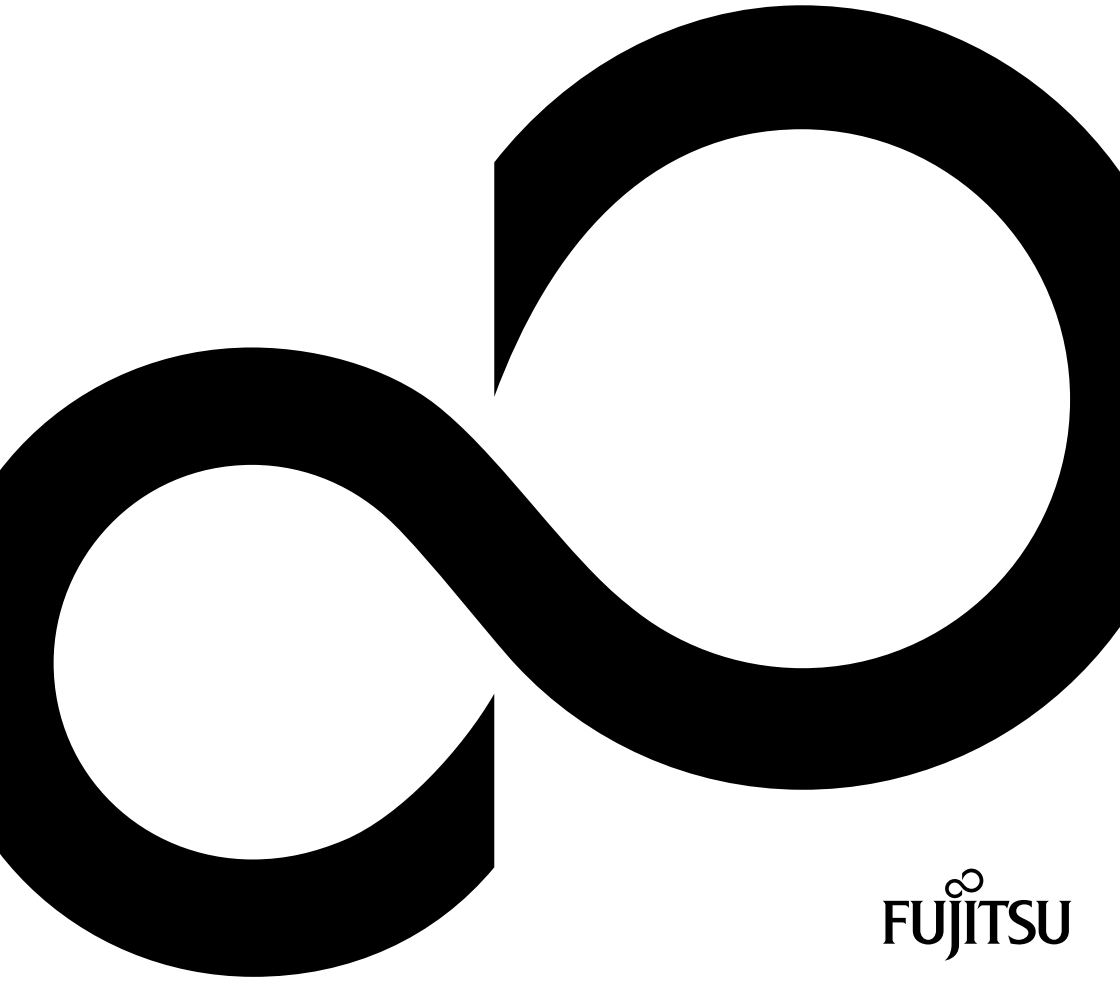
LIFEBOOK T734



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LIFEBOOK T734

Operating manual

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Fujitsu Contact Information

Service and Support

You can contact Fujitsu Service and Support in the following ways:

- Toll free: 1-800-Fujitsu (1-800-838-5487)
- Website: "http://solutions.us.fujitsu.com/www/content/support/contact/index.php"

Before you place the call, you should have the following information ready so that the customer support representative can provide you with the fastest possible solution:

- Product name
- Product configuration number
- Product serial number
- Purchase date
- Conditions under which the problem occurred
- Any error messages that have occurred
- Type of device connected, if any

Fujitsu Shopping Online

Please go to "http://www.shopfujitsu.com/store/ ".

Maintaining Latest Configuration

To ensure that you always have the most current driver updates related to your system, you should occasionally access the Fujitsu Software Download Manager (FSDM) utility. The FSDM utility is available from the Fujitsu Support site. FSDM will allow you to view a list of the most current drivers, utilities, and applications to determine whether you have the latest versions. If you have a Windows 7 or Windows 8/8.1 operating system, you will need to go to the Support Site to download the FSDM Utility: "http://support.fujitsupc.com/CS/Portal/support.do?srch=DOWNLOADS".

Limited Warranty

Your LIFEBOOK notebook is backed by a Fujitsu International Limited Warranty. Check the service kit that came with your notebook for the Limited Warranty period and terms and conditions.

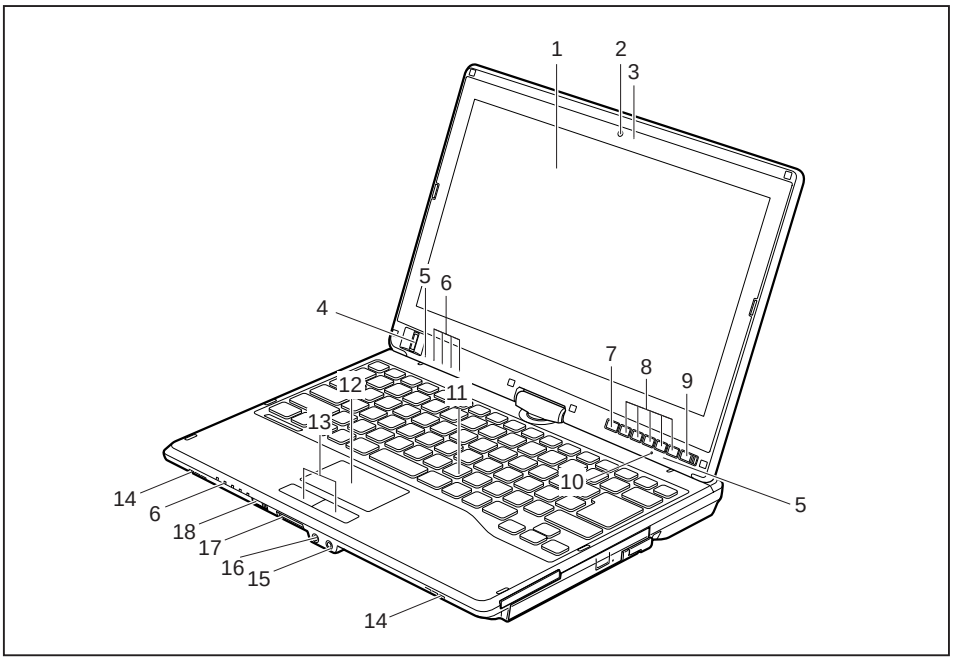
Notational conventions

	Pay particular attention to text marked with this symbol. Failure to observe these warnings could pose a risk to health, damage the device or lead to loss of data. The warranty will be invalidated if the device becomes defective through failure to observe these warnings.
	Indicates important information for the proper use of the device.
►	Indicates an activity that must be performed.
↳	Indicates a result.
`This font`	Indicates data entered using the keyboard in a program dialog or at the command line, e.g. your password (**`Name123`**) or a command used to start a program (**`start.exe`**)
`This font`	Indicates information that is displayed on the screen by a program, e.g.: `Installation is complete.`
This font	Indicates • terms and texts used in a software interface, e.g.: Click on *Save* • names of programs or files, e.g. *Windows* or *setup.exe*.
"This font"	Indicates • cross-references to another section, e.g. "Safety information" • cross-references to an external source, e.g. a web address: For more information, go to "http://solutions.us.fujitsu.com/" • names of CDs, DVDs and titles or designations for other materials, e.g.: "CD/DVD Drivers & Utilities" or "Safety/Regulations" manual
Key	Indicates a key on the keyboard, e.g: F10.
This font	Indicates terms and texts that are emphasized or highlighted, e.g.: **Do not switch off the device**.

Ports and controls

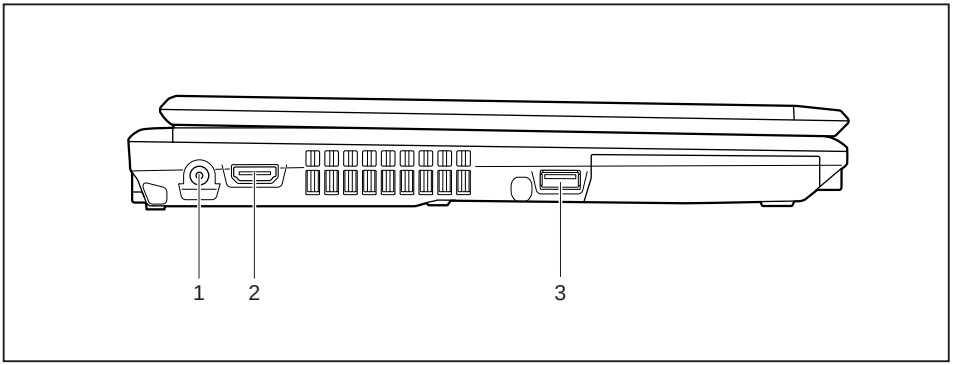
This chapter presents the individual hardware components of your device. It gives you an overview of the device's indicators and connections. Please familiarize yourself with these components before you start to work with the device.

Notebook open



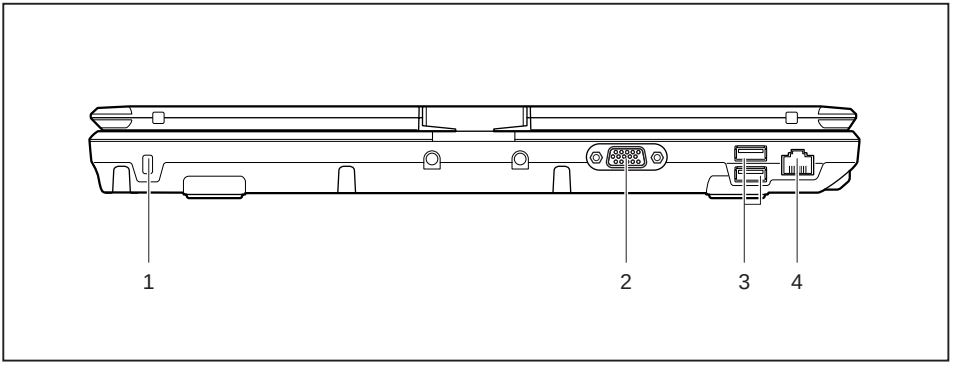
1 = LCD screen
2 = Webcam (optional)
3 = Webcam LED
4 = Fingerprint sensor
5 = Microphone
6 = Status indicators
7 = Windows button
8 = Tablet buttons
9 = ON/OFF button
10 = Ambient light sensor
11 = Keyboard
12 = Touchpad
13 = Touchpad buttons
14 = Speakers
15 = Microphone jack
16 = Headphone port
17 = Memory card slot
18 = ON/OFF button for wireless components

Left panel



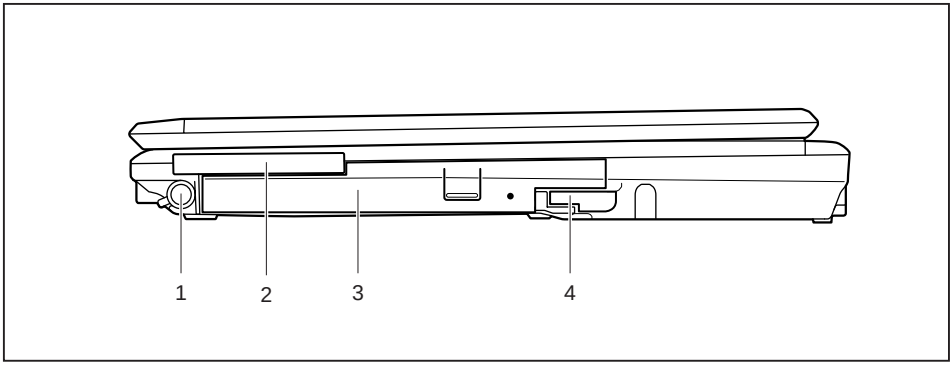
1 = DC input connector (DC IN)
2 = HDMI port
3 = USB port with charging function (Anytime USB charge, USB 3.0)

Rear



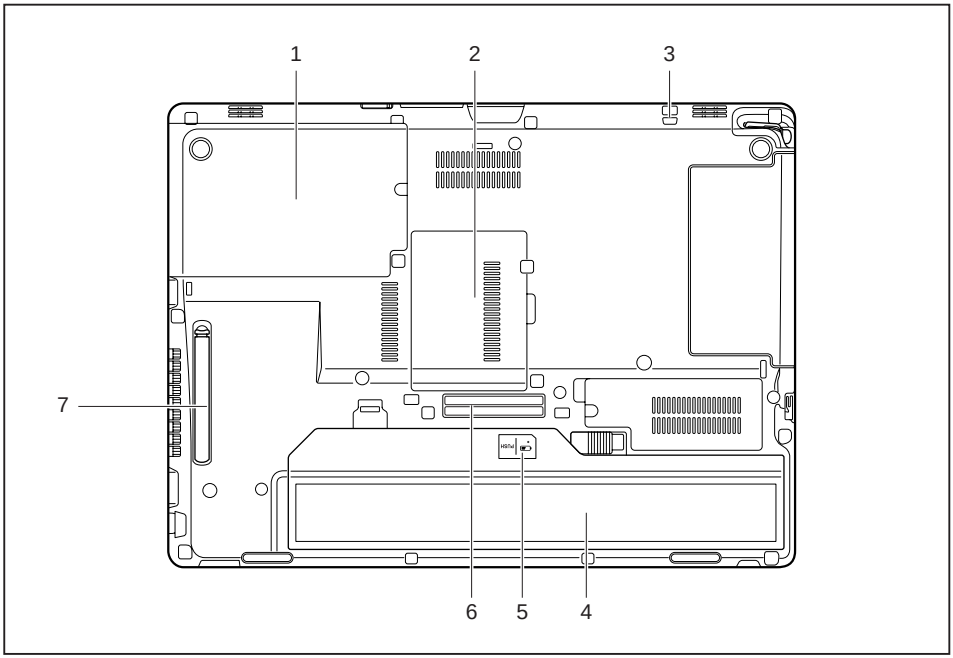
1 = Security Lock device
2 = VGA monitor port
3 = USB ports (USB 2.0)
4 = LAN port

Right-hand side



1 = Pen slot
2 = ExpressCard slot
3 = Module bay with optical drive
4 = Eject lever for module bay

Bottom



1 = Hard disk service compartment
2 = Memory service compartment
3 = Attachment eye for the pen cord
4 = Battery with SIM card slot under the battery
5 = Battery charge status indicator
6 = Port for port replicator
7 = Removable dust filter

Important notes

This chapter contains essential safety information which must be followed when working with your notebook. Other notes also provide useful information which will help you with your notebook.

Safety notes

Please follow the safety notes provided in the "Safety/Regulations" manual as well as the safety notes given below.

Please pay special attention to the sections in the manual marked with the symbol on the left.

When connecting and disconnecting cables, observe the relevant notes in this operating manual.

Read the information on the ambient conditions in the "Technical data", Page 99 and "First-time setup of your device", Page 16 before preparing your notebook for use and switching it on for the first time.

When cleaning the device, please observe the relevant notes in the section "Cleaning the notebook", Page 15.

Pay attention to the additional safety notes for devices with radio components provided in the "Safety/Regulations" manual.

Please refer to the notes in the chapter "Removing and installing components during servicing", Page 82.

Handling the cord on this product will expose you to lead, a chemical known to the state of California to cause birth defects or other reproductive harm.

Wash hands after handling.

This notebook complies with the relevant safety regulations for data processing equipment. If you have questions about using your notebook in a particular area, please contact your sales outlet or our Hotline/Service Desk.

Additional safety notes for devices with radio components

If a radio component (Wireless LAN, Bluetooth, UMTS / LTE or 4G) is incorporated in your notebook, you must be sure to observe the following safety notes when using your notebook:

- Switch off the radio components when you are in an aircraft or driving in a car.
- Switch off the radio components when you are in a hospital, an operating room or near a medical electronics system. The transmitted radio waves can impair the operation of medical devices.
- Switch off the radio components when you let the device get near flammable gases or into hazardous environments (e.g. gas station, paintshops), as the transmitted radio waves can cause an explosion or a fire.

For information on how to switch radio components on and off, see chapter "Switching the wireless components on and off", Page 61.

Energy saving

Switch the notebook off when it is not in use. Switch off external, connected devices if you are not using them. If you use the energy saving functions, the notebook uses less energy. You will then be able to work for longer before having to recharge the battery.

Energy efficiency is increased and the environmental impact is reduced. You save money while protecting the environment.

Energy saving under Windows

► Make use of the power management features (see ""Using the power-management features", Page 56").

Travelling with your notebook

Please observe the points listed below when travelling with your notebook.

Before you travel

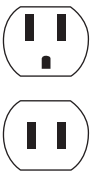
- ► Back up important data stored on your hard disk.
- ► Switch off the radio component for data security reasons. With data traffic via a wireless connection, it is also possible for unauthorized third parties to receive data.

Information on activating data encryption is provided in the documentation for your radio component.

- ► Be sure that you only operate the notebook on aircraft when attendant has announced that it is safe to do so.

When travelling in other countries

- ► If you are travelling abroad, check that the AC adapter can be operated with the local AC voltage. If this is not the case, obtain the appropriate AC adapter for your notebook. Do not use any other voltage converter!
- ► Check whether the local AC voltage and the power cable are compatible. If this is not the case, buy a power cable that matches the local conditions.
- ► Enquire with the corresponding government office of the country you will be travelling in as to whether you may operate the radio component integrated in your notebook there).
- ► Take the necessary plug adapters if you're traveling overseas. Check the following diagram to determine which plug adapter you'll need or ask your travel agent.

Outlet Type	Location
	United States, Canada, Mexico, parts of Latin America, Japan, Korea, the Philippines, Taiwan
	Russia and the Commonwealth of Independent States (CIS), most of Europe, parts of Latin America, the Middle East, parts of Africa, Hong Kong, India, most of South Asia
	United Kingdom, Ireland, Malaysia, Singapore, parts of Africa
	China, Australia, New Zealand

Notebook: transporting

Protect the notebook from severe shocks and extreme temperatures (e.g. direct sunlight in a car).

- ► If your device has an optical drive, remove all data media (e.g. CD, DVD) from the drives.
- ► Switch the notebook off.
- ► Unplug the AC adapter and all external devices from the power outlet.
- ► Disconnect the AC adapter cable and the data cables for all external devices.
- ► Close the LCD screen.
- ► To protect against damaging jolts and bumps, use a notebook carrying case to transport your notebook.

Cleaning the notebook

Do not clean any interior parts yourself; leave this job to a service technician.

Only use cleaning products designed for computers. Normal household cleaners and polishes can damage the markings on the keyboard and the device, the paintwork or the notebook itself.

Ensure that no liquid enters the notebook.

The LCD screen very sensitive to scratches. Only clean the display surface with a very soft, slightly damp cloth.

- ► Switch the notebook off.
- ► In order to prevent accidentially switching the device on, remove the power cable from the AC adapter and remove the battery (see "Removing and installing the battery", Page 47).

↳ The surface can be cleaned with a dry cloth. If particularly dirty, use a cloth which has been moistened in mild domestic detergent and then carefully wrung out.

To clean the keyboard and the touchpad, if available, you can use disinfectant wipes.

Ensure that no liquid enters the device.

First-time setup of your device

Please read the chapter "Important notes", Page 12.

If your device is equipped with a Windows operating system, the necessary hardware drivers and supplied software are already pre-installed.

Before you switch on the device for the first time, connect it to the AC voltage using the AC adapter, see "AC adapter connecting", Page 17. The AC adapter must be connected during the entire installation process.

A system test is performed when your device is first switched on. Various messages can appear. The display may remain dark for a short time or may flicker.

Please follow the instructions on the screen.

NEVER switch off your device during the first-time setup process.

On delivery, the battery can be found in the battery compartment or in the accessories kit. The battery must be charged if you want to operate your device using the battery.

When used on the move, the built-in battery provides the device with the necessary power. You can increase the operating time by using the available energy-saving functions.

For instructions on how to connect external devices (e.g. mouse, printer) to your device, please refer to the operating manual for your device.

Unpacking and checking the device

Should you discover any damage that occurred during transportation, notify your local sales outlet immediately!

- ► Unpack all the individual parts.
- ► Check your device for any visible damage which may have occurred during transportation.

You may need the packaging in the future, if you need to transport your device.

Selecting a location

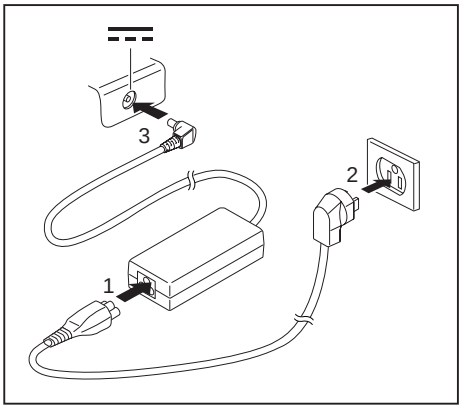
Select a suitable location for the device before setting it up. Follow the instructions below when doing so:

- Never place the device or the AC adapter on a heat-sensitive surface. The surface could be damaged as a result.
- Never place the device on a soft surface (e.g. carpeting, upholstered furniture, bed). This can block the air vents and cause overheating and damage.
- The underside of the device heats up during normal operation. Prolonged contact with the skin may become unpleasant or even result in burns.
- Place the device on a stable, flat, non-slippery surface. Please note that the rubber feet of the device may mark certain types of delicate surfaces.
- Keep other objects at least 100 mm / 3.97 in away from the device and its AC adapter to ensure adequate ventilation.
- Never cover the ventilation slots of the device.
- Do not expose the device to extreme environmental conditions. Protect the device from dust, humidity, and heat.

AC adapter connecting

Observe the safety notes in the enclosed "Safety/Regulations" manual.

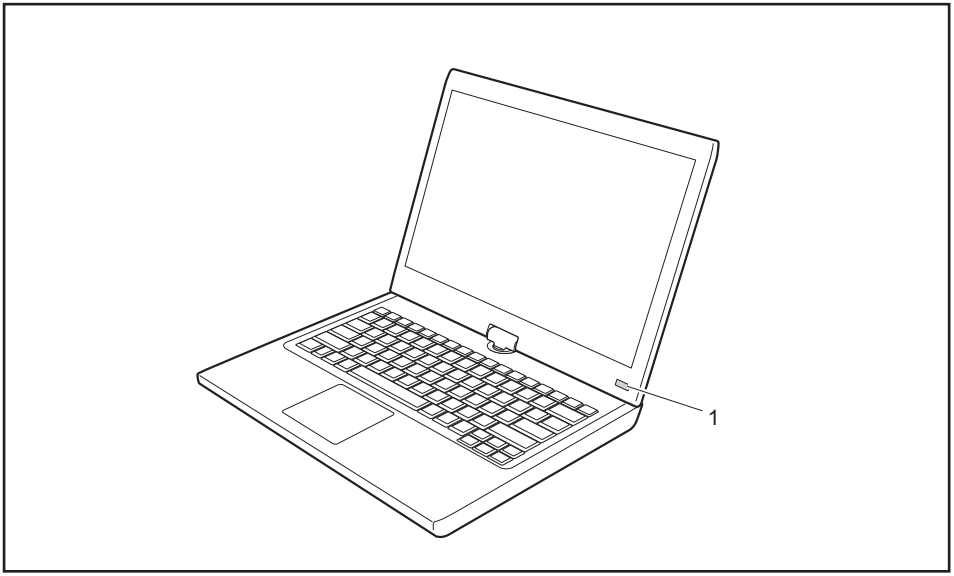
The supplied power cable conforms to the requirements of the country in which you purchased your device. Make sure that the power cable is approved for use in the country in which you intend to use it.



- ► Connect the power cable (1) to the AC adapter.
- ► Plug the AC cable (2) into a AC outlet.
- ► Connect the AC adapter cable (3) to the DC jack (DC IN) of the device.

Switching on the device for the first time

To make it easier to use your device for the first time, the operating system is pre-installed on the hard disk.



► Slide the ON/OFF button (1) to the right to switch on the notebook.
↳ The ON/OFF button returns automatically to its original position.
► During installation, follow the instructions on screen.

You can find information and help on the Windows operating system functions on the Internet at "http://windows.microsoft.com".

Installing Bonus Apps

After you have started your system the first time, you will see a Bonus Apps icon on your desktop.

► Click on the icon to see which additional applications are available for you to install.

↳ Applications that are already installed appear in grey, those that are available for installation appear in blue.

► Select the applications you wish to install by selecting the checkbox adjacent to your selection.

or

► Click *Select All* if you would like to install all available applications

► To confirm your selection click *Install*.

Note that in some cases (depending upon which application was selected for installation) after installation completes, the system will prompt you to reboot.

There are also cases in which if multiple applications are selected to install but one of them needs a reboot, the system will reboot and continue installing the rest of the selected applications.

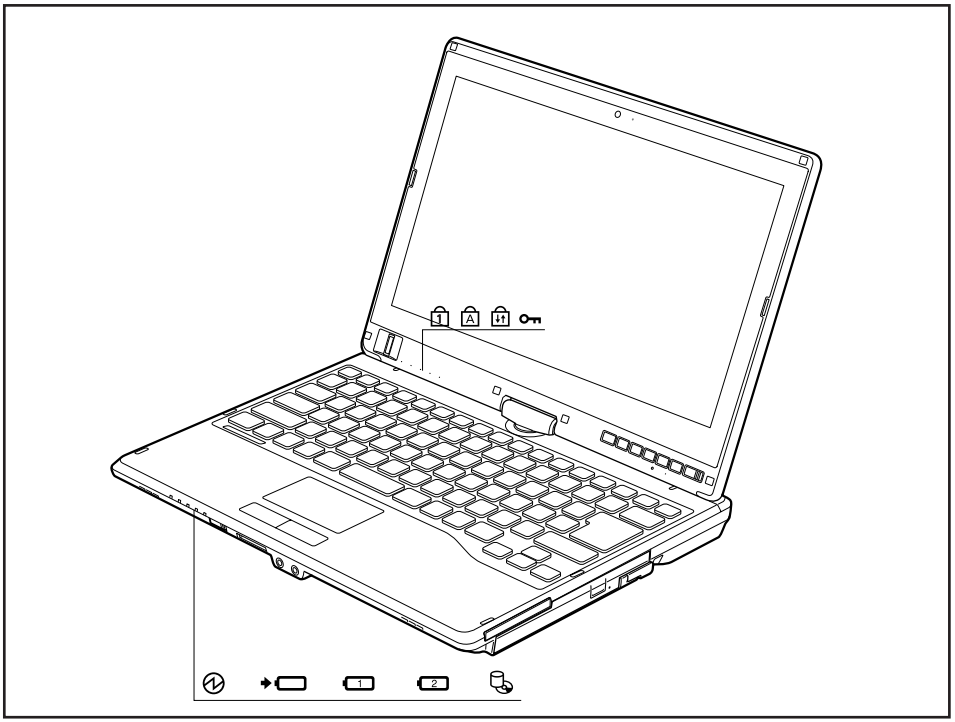
Working with the notebook

This chapter describes the basics for operating your notebook. Please read the chapter entitled "Connecting external devices", Page 76 for instructions on how to connect devices such as a mouse and a printer to the notebook.

Please refer to the notes in "Important notes", Page 12.

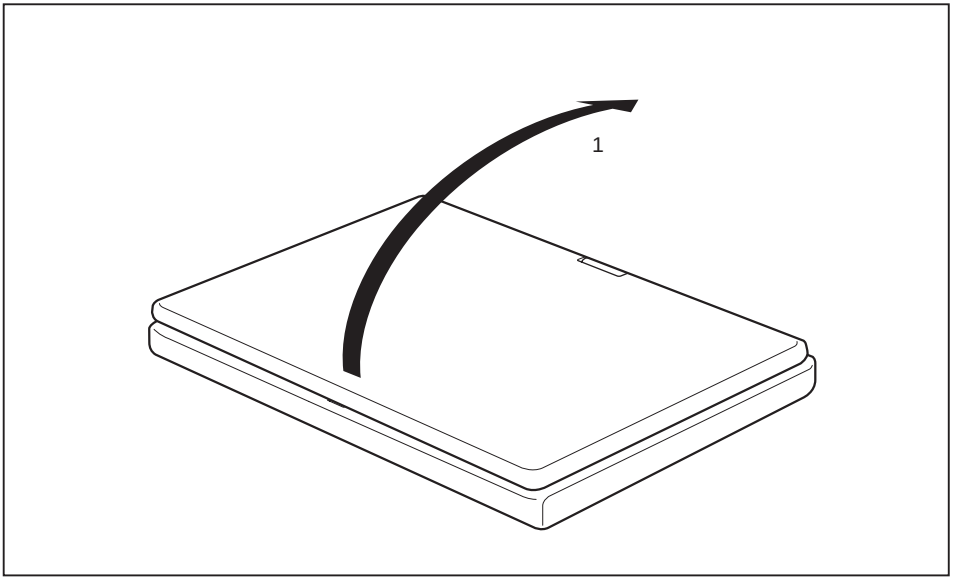
Status indicators

The status indicators provide information about the status of the power supply, the drives and the keyboard functions, etc.



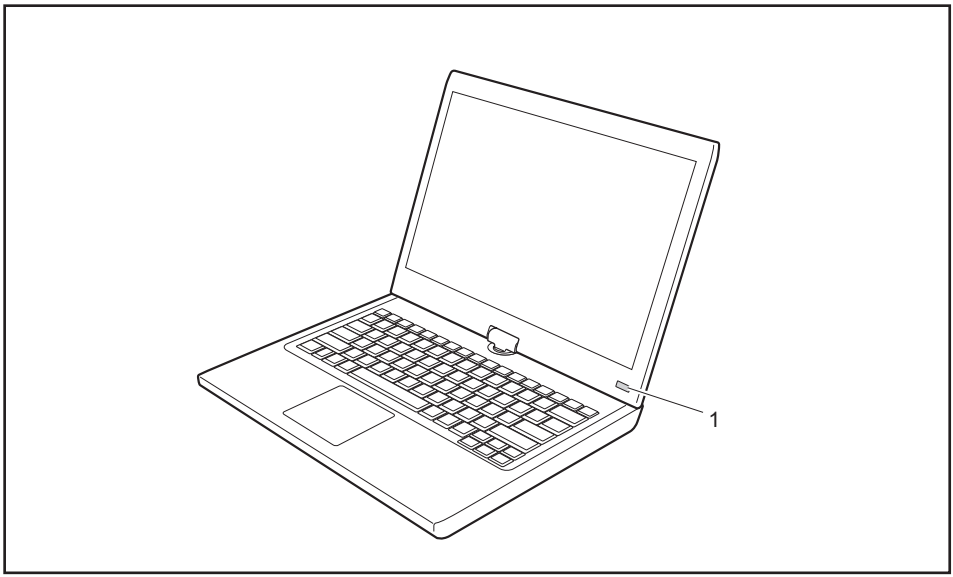
Status displays	Description
	Power-on indicator • Indicator is illuminated: The notebook is switched on. • Indicator flashes: The notebook is in sleep mode (Save-to-RAM). • The indicator is not illuminated: The notebook is switched off or in Save-to-Disk mode.
	Battery charging indicator The battery charging indicator shows whether a battery is installed and being charged.
	Battery indicator This description applies for both batteries. The battery indicator shows the state of charge of the installed battery. • The indicator is lit green: The battery is between 51% and 100% charged. • The indicator is lit orange: The battery is between 13% and 50% charged. • The indicator is lit red: The battery is between 0% and 12% charged. • The indicator flashes orange: The battery state of charge is being checked (for four seconds after battery installation). • The indicator flashes red: The battery is faulty. • The indicator is not lit: There is no battery installed. Note: You can also check the state of charge directly at the main battery.
	Drive indicator Indicator is illuminated: The hard disk drive or the CD/DVD in the optical drive of the notebook is being accessed.
	Num Lock indicator Indicator is lit: The Num key has been pressed. The virtual numerical keypad is activated. You can output the characters indicated on the upper right of the keys.
	Caps Lock indicator Indicator is lit: The Caps Lock key has been pressed. All letters will be output as uppercase letters. In the case of keys labelled several times, the character printed on the upper left of the key will appear when that key is pressed.
	Scroll Lock indicator Indicator is lit: The key combination Fn + Scr has been pressed. The effect that this key has varies between applications.
	Lock Workstation indicator The indicator is illuminated: The security functions of the notebook have locked your workstation.

Opening the notebook



► Open the LCD screen.

Switching on the notebook



► Slide the ON/OFF button (1) to the right to switch on the notebook.
↳ The ON/OFF button returns automatically to its original position.
The ON/OFF button (1) lights up whenever the system is switched on.

Programming the ON/OFF button

You can program the ON/OFF button:

Operating system	Menu
Windows 7	*Start - (Settings) - Control Panel - System and Security - Power Options*

If you have assigned a password, you must enter this when requested to do so in order to start the operating system. Detailed information can be found in the chapter "Security functions", Page 69.

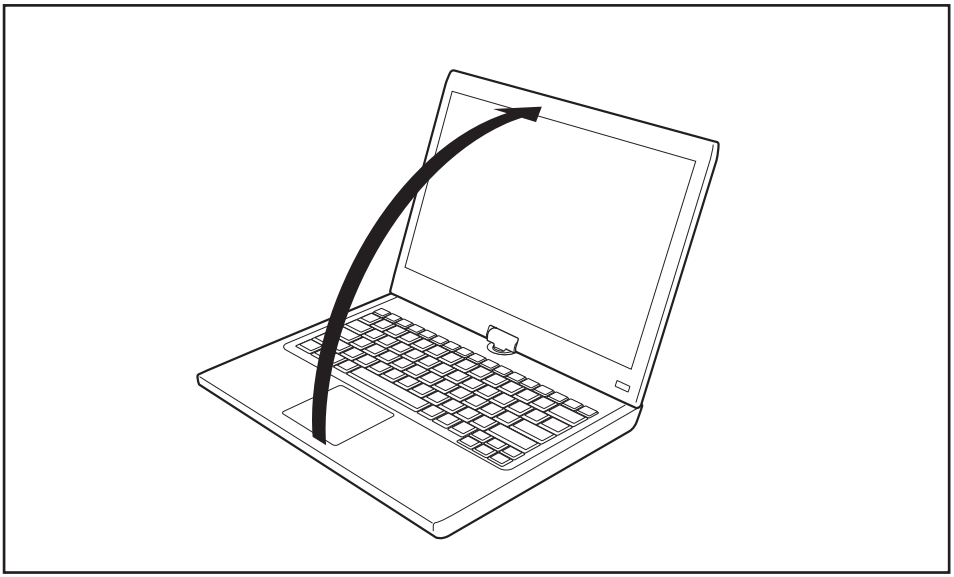
Different ways to use your notebook

During your daily work, you can use your notebook as a Tablet PC or as a notebook, just as you wish.

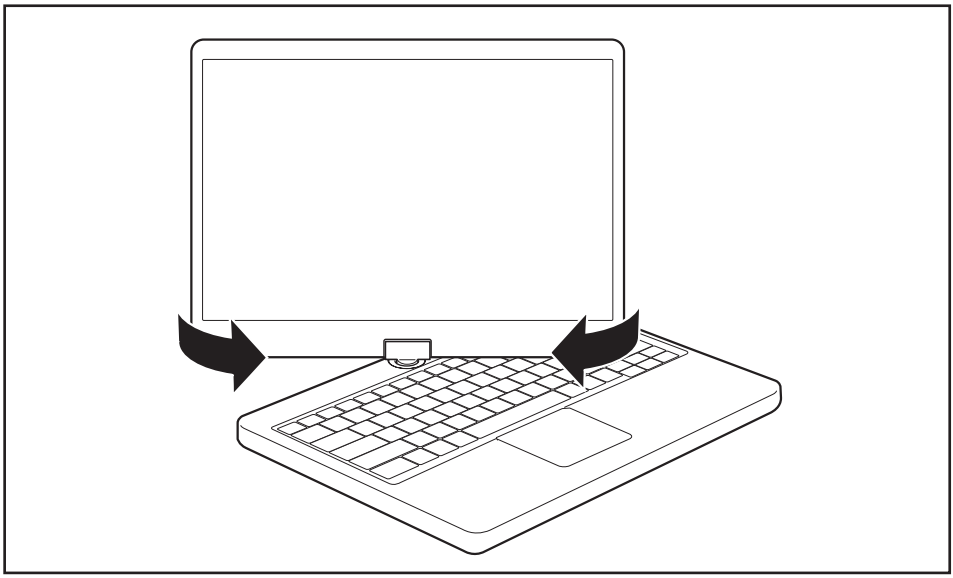
Note the direction of rotation in the following description! No guarantee claims can be met for damage caused by turning in the wrong direction.

You must note that the display cannot be turned completely on its own axis!

From notebook to Tablet PC

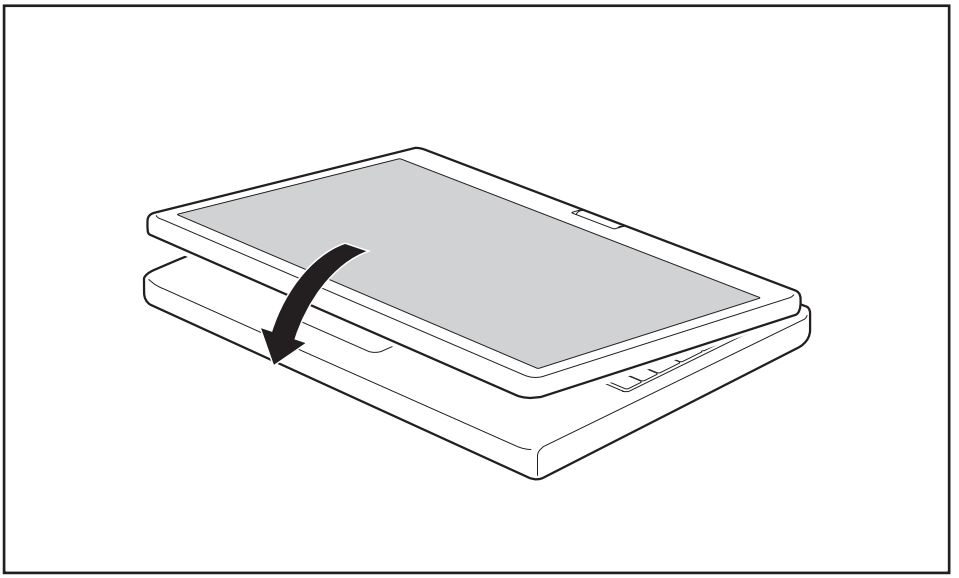


► Raise the LCD display into a vertical position.



► Hold the screen as low as possible on both sides. Turn the screen to the left or right in the direction of the arrow. At first you will feel some slight resistance, then it will turn easily and without friction.

► Turn the display further until it has turned 180° and the hinge latches in.



► Now fold the screen down until the back of the screen is flat on top of the keyboard.
↳ The screen is now secured in the tablet position.

Select display orientation (portrait or landscape orientation)

You can choose to use either portrait or landscape orientation for the display. To switch between portrait or landscape orientation, press the tablet button:

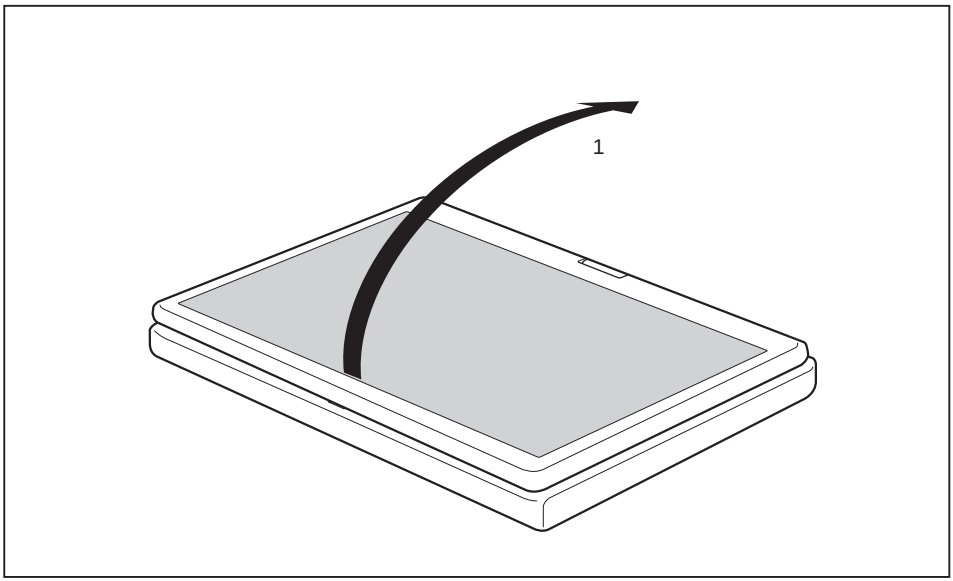
Windows 7

You can change these settings in the Fujitsu menu or under *Start* - (*Settings* -) *Control Panel* - *Hardware and Sound* - *Display* - *Settings*.

Profiles for operating with various different screen modes can be selected via the *Fujitsu Tablet Control* option in the Fujitsu menu. These profiles have preset standard configurations that can be modified as desired.

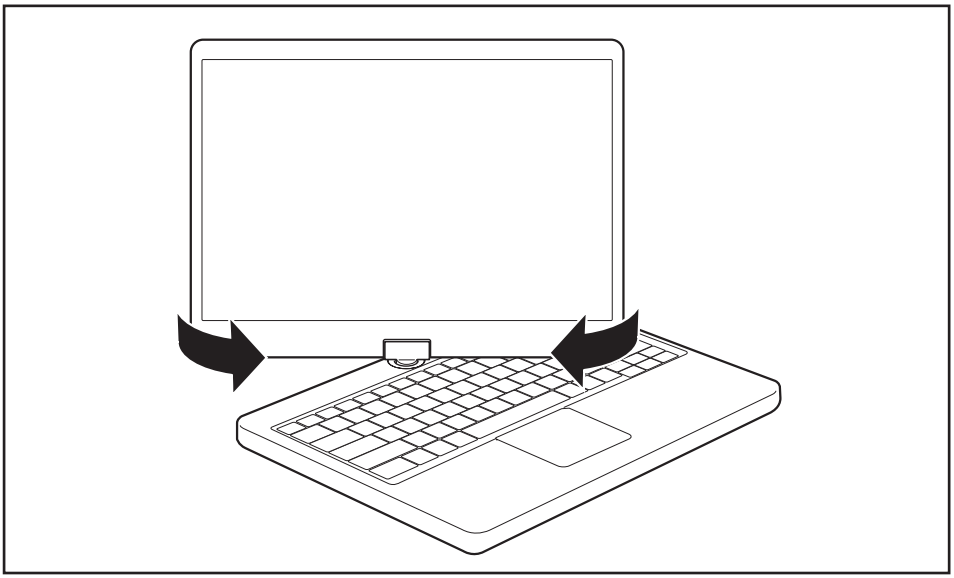
These settings do not just affect the monitor settings on the Tablet PC, but also any external monitors that may be connected.

From Tablet PC to notebook



► Raise the LCD screen into a vertical position.

Note the direction of rotation in the following description! No guarantee claims can be met for damage caused by turning in the wrong direction.



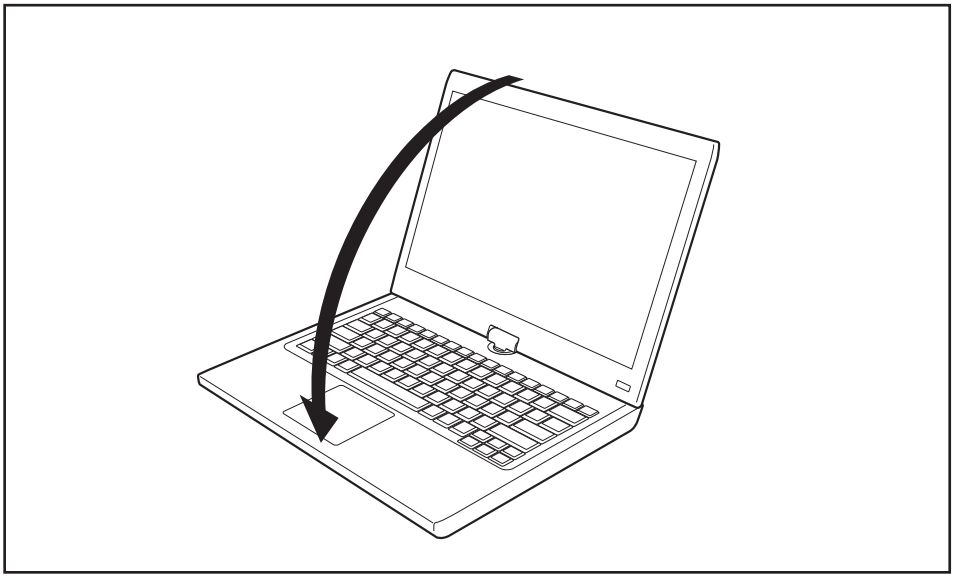
- ► Hold the screen as near to the bottom as possible on both sides and turn the screen in the direction indicated by the rotational direction indicator. It will turn easily and without resistance.
- ► Turn or move the display further until it has turned 180° and the hinge latches in.

Switching off the notebook

- ► Close all applications and then shut down the operating system (please see the "Operating System Manual").
- ► Slide the ON/OFF button towards the right.

↳ The ON/OFF button returns automatically to its original position.

Closing the notebook



► Fold the LCD screen down onto the lower part of the notebook until you feel it lock into place.

Handwriting recognition

For detailed information on handwriting recognition, see the documentation on your operating system.

At present, handwriting recognition under Windows 7 and Windows 8/8.1 supports the following languages:

English, German, French, Italian, Japanese, Korean, Chinese (traditional and simplified), Dutch, Portuguese, Spanish, Brazilian, Norwegian (Bokmål and Nynorsk), Swedish, Finnish, Danish, Polish, Rumanian, Serbian (Cyrillic and Latin script), Catalan, Russian, Czech and Croatian.

Under Windows 8 you can set the required language under *Control Panel – Time, Language and Region – Language*.

LCD screen

High-quality LCD screens (TFT) are installed in notebooks from Fujitsu. For technical reasons, TFT monitors are manufactured for a specific resolution. An optimal, clear picture can only be ensured with the correct resolution intended for the relevant TFT monitor. A monitor resolution which differs from the specification can result in an unclear picture.

The screen resolution of the LCD monitor of your notebook is optimally set at the factory.

Current production technology cannot guarantee an absolutely fault-free screen display. A few isolated constantly lit or unlit pixels may be present. The maximum permitted number of such faulty pixels is specified in the international standard ISO 9241-307 (Class II).

Example:

A screen with a resolution of 1280 x 800 has 1280 x 800 = 1024000 pixels. Each pixel consists of three subpixels (red, green and blue), so there are almost 3 million subpixels in total. According to ISO 9241-307 (class II), a maximum of 2 light and 2 dark pixels and in addition 5 light or 10 dark subpixels or an equivalent mix (1 light subpixel counts as 2 dark subpixels) are allowed to be defective.

Pixel	A pixel consists of 3 subpixels, normally red, green and blue. A pixel is the smallest element that can be generated by complete functionality of the display.
Subpixel	A subpixel is a separately addressable internal structure within a pixel that enhances the pixel function.
Cluster	A cluster contains two or more defective pixels or subpixels in a 5 x 5 pixel block.

Background lighting

TFT monitors are operated with background lighting. The luminosity of the background lighting can decrease during the period of use of the notebook. However, you can set the brightness of your monitor individually.

Synchronising the display on the LCD screen and an external monitor

For more information, please refer to the chapter "Key combinations", Page 42 under "Display output, switch between".

Ambient Light Sensor

In the case of delivery with a *Windows* operating system, the screen brightness is regulated by means of the ambient light sensor and depending on the particular light conditions. This results in optimum readability and longer battery life at the same time.

Using a device as a Tablet PC

You can execute commands as follows:

- using the stylus (supplied with your device).
- using your fingers.

Using fingers

You can execute certain commands by using your finger tip on the touchscreen of your device.

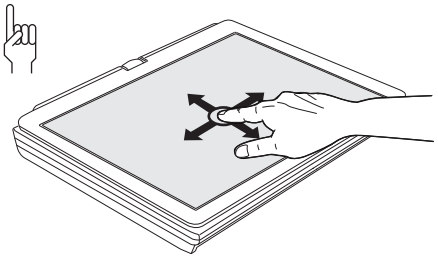
Everything which you can select or activate using your finger tip can also be selected or activated using the stylus.

Calibrate the Dual Digitizer for finger-based operation of the device.

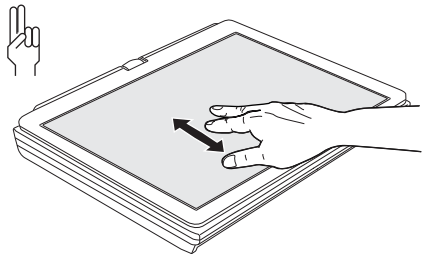
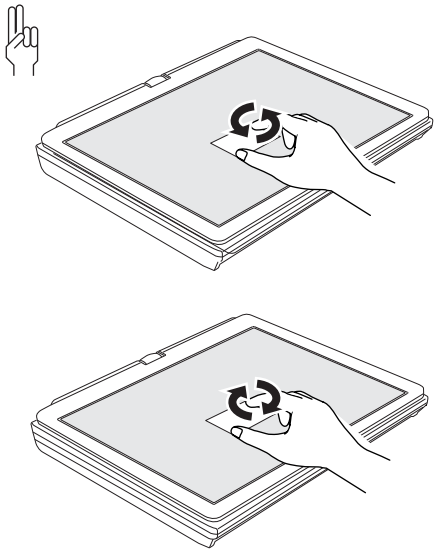
Please see the appropriate supplementary sheet for instructions on how to calibrate your device to use Dual Digitizer Technology.

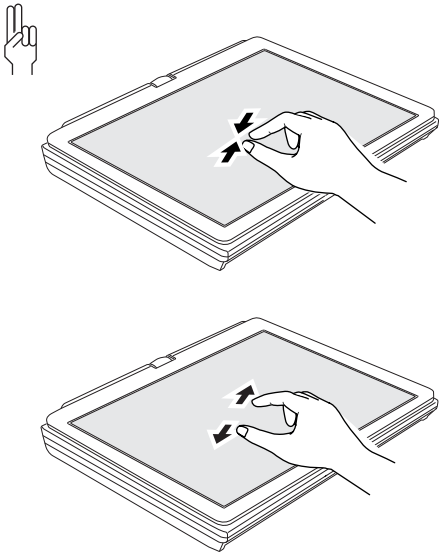
Please note: There are separate calibration programs available for calibrating the stylus and for calibrating finger-based operation. In each case, use the calibration tool described in the supplementary sheet. Do not use the calibration tool for the stylus to calibrate finger-based operation.

Actions with one finger

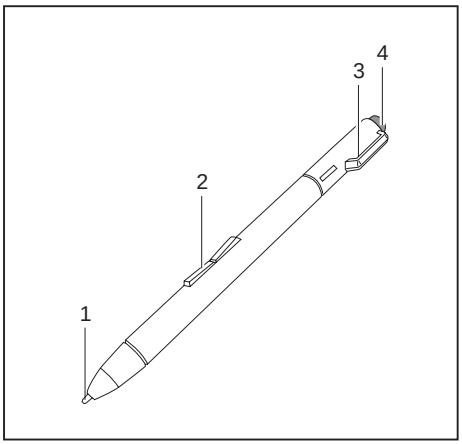
Action	Description
Selecting objects (click with the left mouse button)	► With your finger, tap once briefly on the object.
Starting programs (double-click with the left mouse button)	► With your finger, tap twice briefly in quick succssion on the program icon.
Moving objects/windows (drag with left mouse button pressed, Drag & Drop)	 ► Place a finger directly on the object/window, hold the finger pressed against the touchscreen and move the desired object/window.
Opening a context menu (click with the right mouse button)	► Touch the desired item once with your finger tip. Keep the finger tip pressed against the touchscreen. The context menu appears.
Moving the cursor	► Position one finger on the touchscreen and move the finger in the desired direction.

Actions with two fingers

Action	Description
Scrolling	 ► Position two fingers on the touchscreen. ► Move your fingers upwards to scroll up. or ► Move your fingers downwards to scroll down.
Rotating	 ► Position the thumb on the touchscreen, then turn the picture clockwise or counter-clockwise using your index finger.

Action	Description
Increasing or decreasing the view	 ► Position two fingers on the touchscreen and move them apart to increase the view. or ► Position two fingers on the touchscreen and move them together to decrease the view.
Blocking context-sensitive menus	► With two fingers, tap twice briefly in quick succession on the touchscreen.

Using the stylus



1 = pen tip

2 = rocker button

3 = eyelet for pen cord

4 = eraser

You can use the pen on your notebook as an electronic writing implement to select items and to navigate through menu options and programs. Programs that support handwriting recognition also allow you to write characters directly on the screen with the pen. You can also use the pen as a drawing tool.

The notebook pen is retained securely in the pen slot. This ensures that the pen cannot be lost, regardless of whether you use the notebook as a Tablet PC or as a notebook, or transport it while travelling. Always replace the pen in its slot when you are not using it.

The notebook is supplied with a pen cord which you can attach to the eyelets on the pen and on the notebook.

Only use the pen provided with your notebook. Do not use substitute pen tips that were not specially designed for your notebook. Replace the stylus tip if it is worn. The warranty does not cover a scratched screen.

While writing, you should take care not to scratch the surface of the display (e.g. with a wristwatch or bracelet).

The pen of your notebook is an electronic instrument which can be damaged if used incorrectly. Handle the pen with care.

The following list contains guidelines for proper pen handling:

- Do not gesture with the pen.
- Do not use the pen as a pointer.
- Never use the pen on any other surface than the screen of your notebook.
- Do not try to turn the thumb grip on the pen. The thumb grip is used to place the pen in its slot and to take it out of the slot.
- Never store the pen with the tip bearing the weight of the pen (e.g. with the tip down in a pen holder). If the pen is stored with the tip pointing down, this may have an adverse effect on the pen mechanism (particularly under high temperatures). In this case the pen tip may react as though it is constantly being pressed down. To avoid damage, the pen should be stored in the pen slot when not in use.

The pen can be influenced by electromagnetic fields (cursor quivers or jumps). There may be a few areas on the screen where the cursor quivers slightly in spite of pressing the pen down firmly.

The screen responds to entries made with the tip of the finger or the pen when the tip of the finger or the pen is in direct contact with the screen.

You can use the pen to perform all the functions for which you would otherwise use a mouse. In addition, you can conveniently delete hand-written pen entries using the pen.

Handling	Mouse	Pen
Selecting menu entries	Click with the left-hand mouse button.	Touch the menu entry with the pen tip.
Starting programs	Double click with the left-hand mouse button.	Briefly touch the program icon twice with the pen tip.
Moving objects/windows	Drag with the left-hand mouse button held pressed.	Place the pen tip directly on the object/window. Hold the pen tip pressed against the screen. Move the desired object/window.
Opening a context menu	Click with the right-hand mouse button.	Touch the desired element with the pen and leave the pen on the element for a moment.
Moving the cursor	-	Place the pen tip directly on the screen.

Setting the pen

Operating system	Menu
Windows 7	Under *Hardware and Sound – Pen and Input Devices* in the Control Panel you can change various settings for the pen (assignment and function of the pen button).

Calibrating the pen

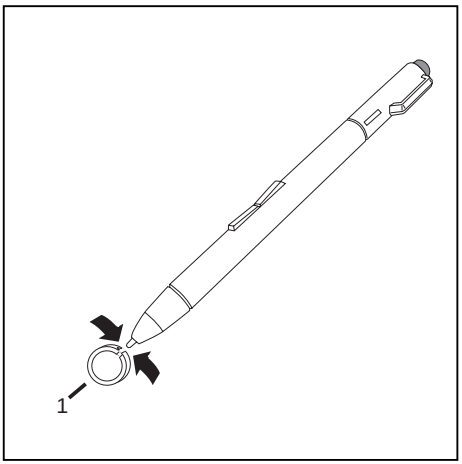
Before using the pen for the first time, you should calibrate it so that the cursor follows the movements of the pen as accurately as possible. You should also always repeat the calibration if the co-ordination between the pen and cursor movement deteriorates.

Operating system	Menu
Windows 7	To calibrate, call up the *Hardware and Sound / Tablet PC Settings* function in the Control Panel. You need to calibrate both portrait and landscape formats.

Replacing the pen tip

With use, the pen tip may become worn or may pick up foreign particles that can scratch the screen. A damaged or worn tip may not move freely, causing unpredictable results when using the pen.

If your pen exhibits these problems, you should replace the pen tip. To do this, use the supplied tool (1).



- ► To remove the tip, position the tip in the gap between the two ends of the tool supplied.
- ► Pinch the two ends of the supplied tool together so that the tip is firmly clasped, then pull it from the barrel.
- ► To replace the tip, retrieve one of the new tips that were supplied your pen. Insert the flat end of the tip into the barrel and exerting gentle pressure, push it in until it is firmly in place.

i

If the tip is worn or damaged, discard it.

Installing a pen cord

You should attach the pen with a pen cord to prevent accidentally dropping or losing it.

- ► Attach the end of the pen cord with the smaller loop to your pen.
- ► Attach the end of the pen cord with the larger loop to your notebook.

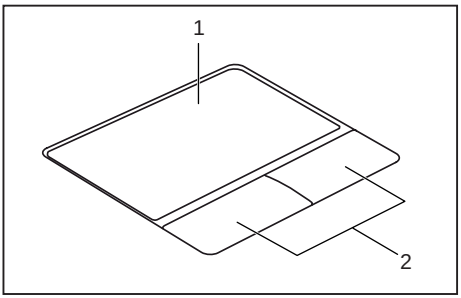
Using the device as a notebook

Touchpad and touchpad buttons

Keep the touchpad clean. Protect it from dirt, liquids and grease.

Do not use the touchpad if your fingers are dirty.

Do not rest heavy objects (e.g. books) on the touchpad or the touchpad buttons.



1 = Touchpad

2 = Touchpad buttons

The touchpad enables you to move the mouse pointer on the screen.

The touchpad buttons allow you to select and execute commands. They correspond to the buttons on a conventional mouse.

You can use a key combination to disable the touchpad, to avoid accidentally moving the pointer on the screen (see also "Key combinations", Page 42).

Moving the pointer

► Move your finger on the touchpad.

↳ The pointer will move.

Change mouse properties

► To disable the clickpad, press Fn + F4 key. This shortcut works on both Windows 7 and Windows 8.

Selecting an item

► Move the pointer to the item you wish to select.

► Tap the touchpad once or press the left button once.

↳ The item is selected.

Executing commands

► Move the pointer to the field you wish to select.
► Tap the touchpad twice or press the left button twice.
↳ The command is executed.

Dragging items

► Select the desired item.
► Press and hold the left button and drag the item to the desired position with the finger on the touchpad.
↳ The item will be moved.

Switching the Touchpad on and off

You can switch the Touchpad on and off using a key combination, see "Key combinations", Page 42.

Keyboard

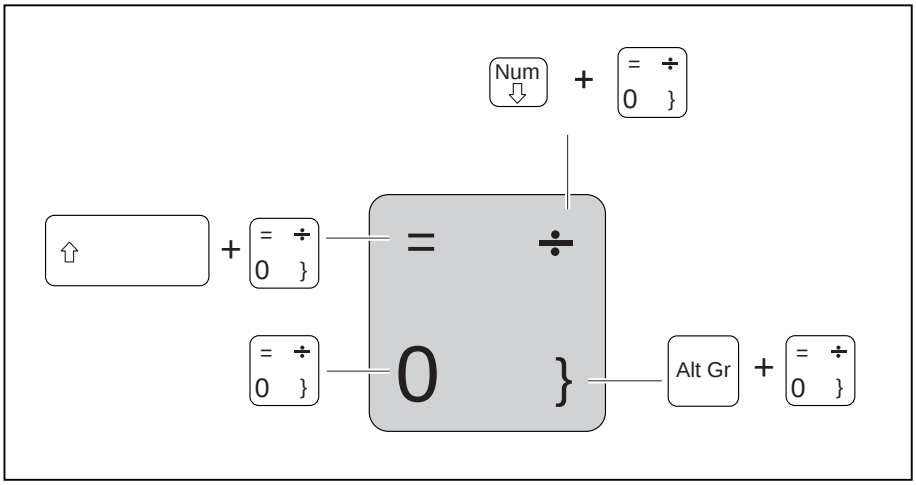
The keyboard of your notebook is subject to continuous wear through normal use. The key markings are especially prone to wear. The key markings are liable to wear away over the life of the notebook.

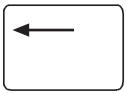
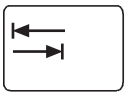
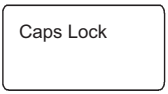
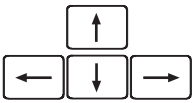
The keyboard has been designed to provide all the functions of an enhanced keyboard. Some enhanced keyboard functions are mapped with key combinations.

The following description of keys refers to Windows. Additional functions supported by the keys are described in the relevant manuals supplied with your application programs.

The figure below shows how to access the different characters on keys with overlaid functions. The example applies when the Caps Lock key has not been activated.

The illustrations shown below may differ from your actual device.

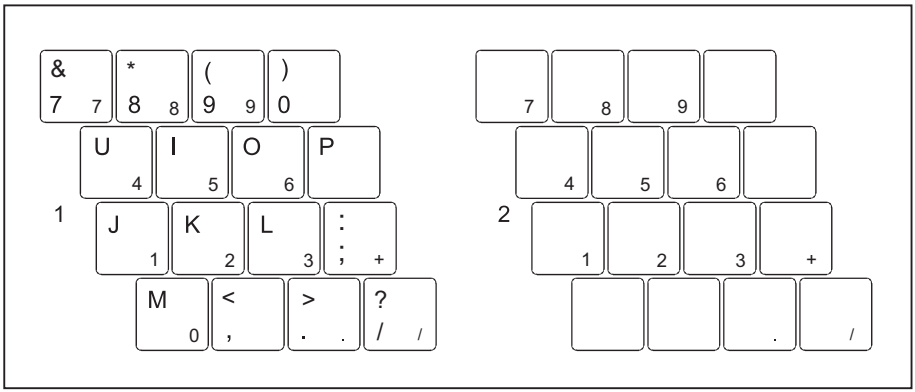


Key	Description
	**Backspace key** The Backspace key deletes the character to the left of the cursor.
	**Tab key** The Tab key moves the cursor to the next tab stop.
	Enter key (return) The Enter key terminates a command line. The command you have entered is executed when you press this key.
	**Caps Lock key** The Caps Lock key activates the Caps Lock mode, and the corresponding icon is displayed in the Windows information area. In Caps Lock mode, all of the characters you type appear in upper case. In the case of overlay keys, the character printed on the upper left of the key will appear when that key is pressed. To cancel the Caps Lock function, simply press the Caps Lock key again.
	Shift key The Shift key causes uppercase characters to appear. In the case of overlay keys, the character printed on the upper left of the key appears when that key is pressed.
	Fn button The Fn key enables the special functions indicated on overlay keys (see "Key combinations", Page 42).
	**Cursor keys** The cursor keys move the cursor in the direction of the arrow, i.e. up, down, left, or right.
	Start key The Start key opens the Windows Start menu.
	Menu key The Menu key invokes the menu for the marked item.

Virtual numeric keypad

To provide the convenience of a numeric keypad, your keyboard is equipped with a virtual numeric keypad. The special keys of the virtual numeric keypad are recognisable by the numbers and symbols printed in the upper right corner of each key. If you have switched on the virtual numeric keypad, you can output the characters shown on the upper right of the keys.

The keyboard layout shown below may differ from your actual device.



1 = Valid characters when the Num key is not activated

2 = Valid characters when the Num is activated

Further information about the status indicators can be found in chapter "Status indicators", Page 20.

Country and keyboard settings

If you want to change the country and keyboard settings, proceed as described in the documentation concerning your operating system.

Key combinations

The key combinations described below apply when using Microsoft Windows operating systems. Some of the following key combinations may not function in other operating systems or with certain device drivers.

Key combinations are entered as follows:

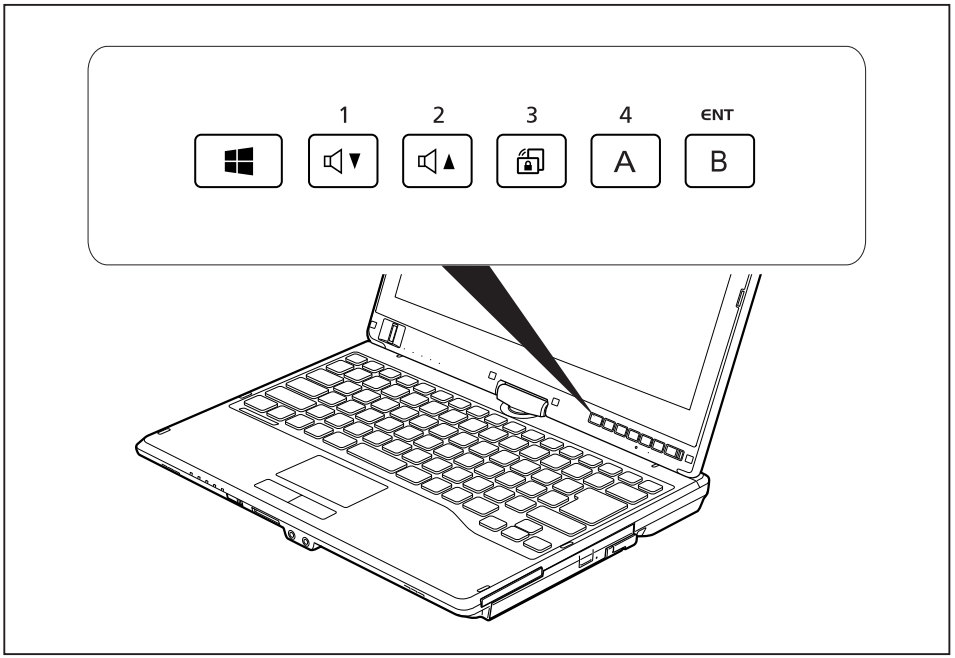
- ► Press the first key in the combination and keep it pressed.
- ► While holding the first key down, press the other key or keys in the combination.

Combination	Description
Fn + F3	**Switching the speakers on/off** This key combination switches the integrated speakers on and off.
Fn + F4	**Enable/disable touchpad** This key combination enables and disables the touchpad.
Fn + F6	**Decrease screen brightness** This key combination decreases the brightness of the screen.
Fn + F7	**Increase screen brightness** This key combination increases the brightness of the screen.
Fn + F8	**Decrease volume** This key combination reduces the volume of the internal speakers.
Fn + F9	**Increase volume** This key combination increases the volume of the internal speakers.

Combination	Description
Fn + F10	**Toggle output screen** Use this key combination to select which screen(s) is/are used for display if an external monitor is connected. Screen output is possible: • only on the notebook's LCD screen • only on the external monitor • on the notebook's LCD screen and the external monitor at the same time. Press the key combination several times to switch through all possible settings. It is possible to display video on two screens simultaneously, regardless of the type and number of external screens connected. If you have connected two external monitors to the port replicator, the following display outputs are possible: • only on the notebook's LCD screen • only on the external monitor (analog) • at the same time on the LCD screen (digital) • at the same time on the notebook's LCD screen and on the external monitor (analog) You cannot use the key combination to switch output at the same time to both external monitors on the port replicator.
Ctrl + C	**Halt current operation** This key combination can be used to halt an operation instantly without clearing the keyboard buffer.
⇧ + ⇤	**Back tab** This key combination moves the cursor back to the previous tab stop.

Tablet buttons

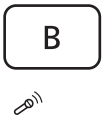
Your notebook has six multifunctional tablet buttons. You can navigate on the screen with a simple press of a button, call preset applications or ones that you have set yourself.



The tablet buttons have different uses in different modes.

In addition, you can still individually program some of the tablet buttons, see "Programming the tablet buttons", Page 45.

Basic functions when the device has booted

Button	Basic function
	Windows button This button corresponds to the function of the Windows Start key on a keyboard. If the button is pressed in combination with the ON/OFF button, the function corresponds to the key combination Ctrl + Alt + Del.
1 	**Decrease volume** This button reduces the volume of the built-in speakers.
2 	**Increase volume** This button increases the volume of the built-in speakers.
3 	**Rotation Lock** When you press this button, the orientation of the screen display changes from portrait (vertical) to landscape (horizontal) or vice versa. When you would like to use the Tablet PC as an eBook, for example, you would use the portrait orientation. When accessing spreadsheets, you would more typically use a landscape orientation. **Windows 7:** This button locks and unlocks the automatic rotation of the display.
4 	**Button "A"** This button starts the *Fujitsu Menu* application. You can use this application to change certain system settings. The button is freely programmable.
ENT 	**Button "B"** Use this button to start the *Windows Journal*. The button is freely programmable.

Programming the tablet buttons

You can program the tablet buttons to open a specific application or execute a specific function when pressed.

Proceed as follows:

- ► In Control Panel, select the option to manage the settings for the tablet buttons and pen.
- ► Follow the instructions on the screen and program the tablet buttons as you require.

Webcam

Depending on the software used, you can use your webcam to take pictures, record video clips or take part in web chats.

- The picture quality depends on the lighting conditions and the software being used.
- You can only operate the webcam with a particular application (e.g. an Internet telephony program or a video conferencing program which supports a webcam).
- When using the webcam the notebook support must not wobble.
- The webcam automatically adjusts itself to the current light level. For this reason the LCD screen may flicker while the light level is adjusted.

Further information on using the webcam and on the additional settings which are possible for your webcam can be found in the help function of the program which uses the webcam.

Rechargeable battery

When not plugged into a power outlet, the notebook runs on its built-in battery. You can increase the life of the battery by caring for the battery properly. The average battery life is around 500 charge/discharge cycles.

You can extend the battery life by taking advantage of the available energy saving functions.

Charging, caring for and maintaining the battery

The notebook battery can only be charged, when the ambient temperature is between 5°C / 41°F and max. 35°C / 95°F.

You can charge the battery by connecting the notebook to the AC adapter (see "AC adapter connecting", Page 17).

If the battery is running low you will hear a warning alarm. If you do not connect the AC adapter within five minutes of the warning alarm described above, your notebook will automatically switch off.

Monitoring the battery charging level

Windows also has a "Battery status meter" in the taskbar for monitoring the battery capacity. When you place the mouse pointer on the battery symbol, the system displays the battery status.

Battery storage

Keep the battery pack between 0°C / 32°F and 30°C / 86°F. The lower the temperature at which the batteries are stored, the lower the rate of self-discharge.

If you will be storing batteries for a longer period (longer than two months), the battery charge level should be approx. 30%. To prevent exhaustive discharge which would permanently damage the battery, check the level of charge of the battery at regular intervals.

To be able to make use of the optimal charging capacity of the batteries, the battery should be completely discharged and then fully recharged.

If you do not use the batteries for long periods, remove them from the notebook. Never store the batteries in the device.

Removing and installing the battery

Only use rechargeable batteries approved by Fujitsu for your notebook.

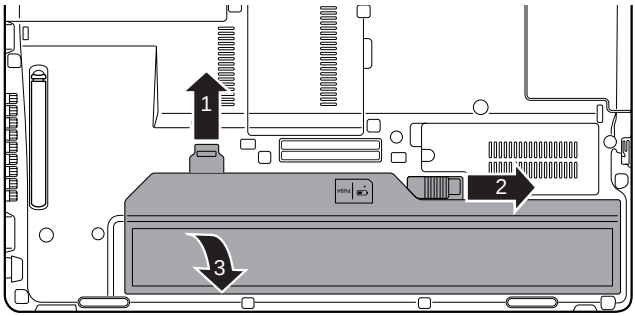
Never use force when fitting or removing a battery.

Make sure that no foreign bodies get into the battery connections.

Never store a battery for longer periods in the discharged state. This can make it impossible to recharge.

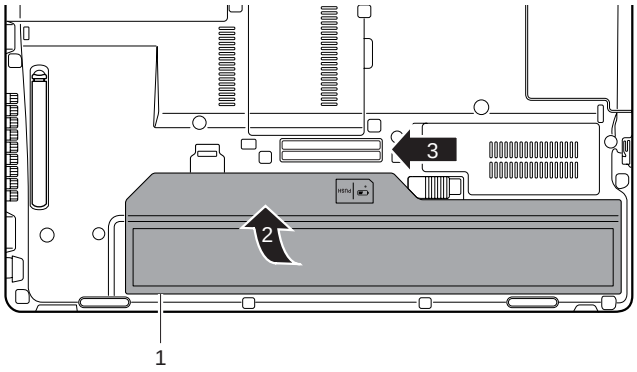
Removing the battery

► Prepare for removal, see chapter "Preparing to remove components", Page 83.



► Slide the release button (1) in direction of the arrow.
► Slide the release button (2) in direction of the arrow.
► Lift the battery out of the battery compartment (3).

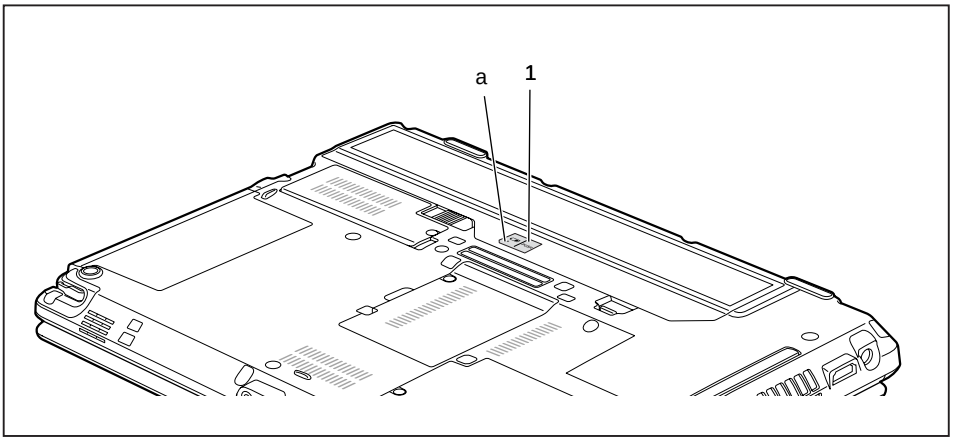
Inserting battery



- ► Place the battery on the lower edge of the battery compartment (1).
- ► Slide the battery into the battery compartment until you feel it engage (2).
- ► Slide the release button into its locked position (3).
- ► Complete the removal, see chapter "Finishing component removal", Page 89.

Battery charge status indicator

You can check the charge status directly on the battery itself.



► Press the key (1).

↳ The LED (a) lights up in one of the following colours:

LED indicator	State of charge
Green	The battery is between 50% and 100% charged.
Orange	The battery is between 11% and 49% charged.
Red	The battery is between 1% and 10% charged.
LED not lit	The battery is fully discharged.

Module

The design of your notebook enables the flexible use of notebook batteries and drives. The following modules can be operated in the module bay of your notebook:

- Second battery
- Optical drive
- Empty plug-in unit (save weight)

Only use modules designed for your notebook.

Do not use force when installing or removing the module.

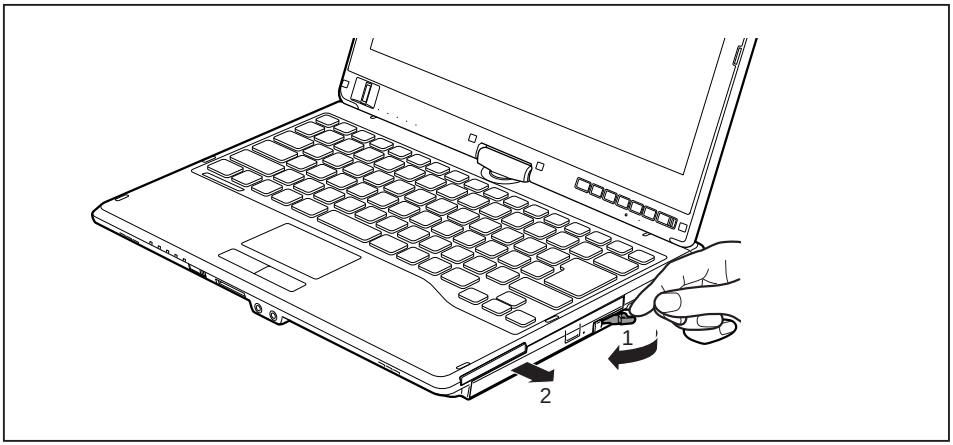
Make sure that no foreign objects enter the module bay.

You can swap modules during operation. This means you do not need to switch off the notebook.

To replace a module, simply click on the corresponding icon in the task bar and then on *Exit* or *Select - Exit*.

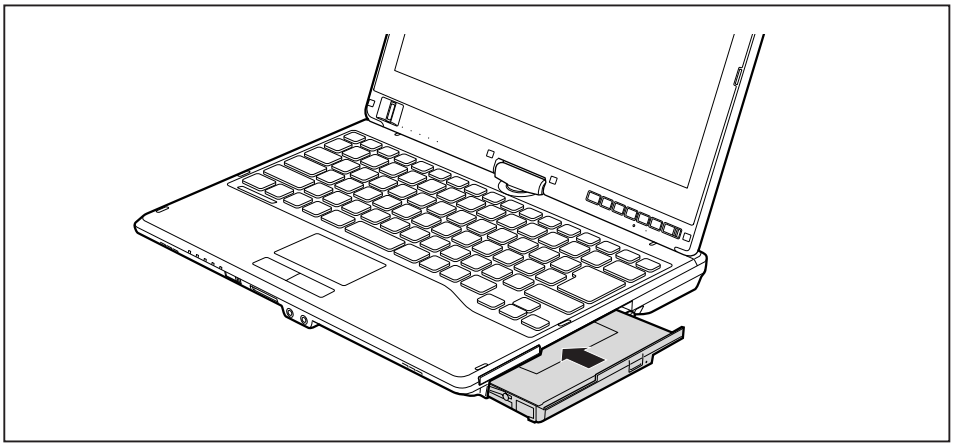
The module can now be removed without any further actions being necessary.

Removing a module



► Slide the release lever in the direction of the arrow (1).
► Now pull the module out of the module bay (2).

Installing a module



► Place the module into the module bay so that the contacts enter first.
► Push the module into the module bay until you feel it locking into place.

Optical drive

This product contains a light emitting diode, classification according to IEC 60825 1:2007: LASER CLASS 1, and must therefore not be opened.

Handling optical disks

Observe the following guidelines when handling optical disks:

- Avoid touching the surface of a optical disk. Only handle optical disks by their edges.
- Always store optical disks in their cases. This will protect the optical disk against being covered in dust, scratched or damaged in any other way.
- Protect your optical disks against dust, mechanical vibrations and direct sunlight.
- Avoid storing a optical disk in areas subject to high temperatures or humidity.

You may use both 3.15 and 4.7-inch optical disks in the optical drive.

When using a optical disk of lesser quality, vibrations and reading errors may occur.

CD/DVD indicator

The CD/DVD indicator flashes when a optical disk is inserted. The indicator goes out when the drive is ready for reading. The indicator lights up when the drive is being accessed. You may only remove the optical disk when the indicator is unlit.

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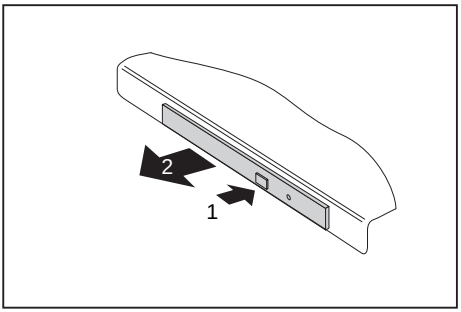
If the CD/DVD indicator does not go out after a optical disk has been inserted, but instead continues to flash, this means that the drive cannot access the optical disk.

Either the optical disk is damaged or dirty or you are using a optical disk that the drive cannot read.

Inserting or removing a optical disk

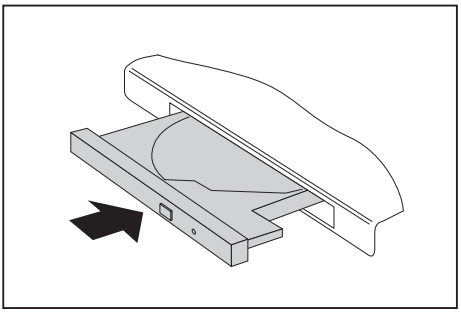
The notebook must be switched on.



► Push the insert/eject button (1).

↳ The drive tray will open.

► Gently pull the drive tray (2) completely out.



► Place the optical disk in the drive tray with the printed side facing upwards.

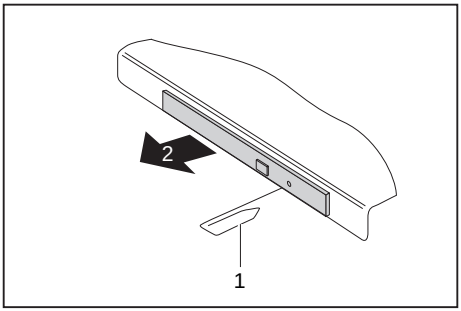
or

► Remove a optical disk that has been inserted.

► Push in the drive tray until you feel it lock into place.

Manual removal (emergency removal)

In the event of a power failure or damage to the drive, you can remove the optical disk manually.



- ► Switch your notebook off.
- ► Push a pen or a piece of wire (such as a paperclip) firmly into the opening (1).
- ↳ The drive tray is ejected. You can now pull the drive tray (2) out of the drive.

Removing and installing the removeable dust filter

In order to ensure optimum cooling of the components in your notebook, you should periodically clean the dust filter of the heatsink.

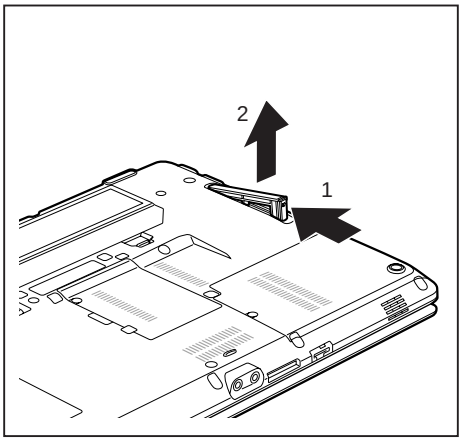
This ensures optimum fan performance. You can achieve the best cleaning results with a small hand-held vacuum cleaner.

If necessary, you can also use a dry brush to release dust from the ventilation slots.

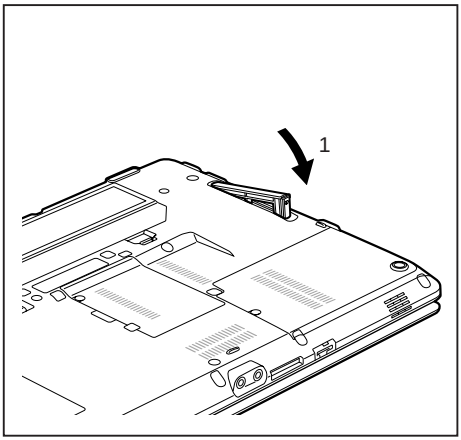
Do not use any cleaning liquids! Ensure that no liquid enters the device.

To avoid overheating of the device, do not remove the removable dust filter when the device is switched on.

► Prepare for removal, see chapter "Preparing to remove components", Page 83.



- ► Press and hold the lock of the removable dust filter (1) and remove it from its slot (2).
- ► Clean the dust chamber.



- ► Insert the removable dust filter into the slot (1) at an angle as shown, and ensure that you feel it click into place.
- ► Complete the removal, see chapter "Finishing component removal", Page 89.

Using the power-management features

The notebook uses less power when the available power-management features are used. You will then be able to work longer when using the battery before having to recharge it.

Power efficiency is increased and environmental pollution reduced. By choosing the best power options, you can make significant savings and at the same time help protect the environment.

When you close the LCD screen, depending on the setting in Windows, the notebook automatically enters a power saving mode.

We recommend the following settings:

Function	On external power	On battery power
Turn off monitor	After 10 minutes	After 5 minutes
Turn off hard disk(s)	After 15 minutes	After 10 minutes
Energy saving (S3)	After 20 minutes	After 15 minutes
Hibernate mode (S4)	After 1 hour	After 30 minutes

- ► Select the power management functions in your Control Panel.
- ► Select the Screen Saver in your Control Panel.

or

- ► Right-click on the desktop. Switch on the screen saver by clicking *Personalization – Change screen saver*.

If you need further information about an option, you can get help with most settings by pressing F1 to open the Microsoft Help.

When the notebook is in power-saving mode, the following must be remembered:

During power saving mode, open files are held in the main memory or in a swap file on the hard disk.

Never turn off your notebook while it is in a power saving mode. If the built-in battery is nearly empty, close the open files and do not go into power saving mode.

If you do not intend to use your notebook for a long period of time:

- ► Exit power saving mode if necessary via the mouse or keyboard or by switching on the notebook.
- ► Close all opened programs and completely shut down the notebook.

Memory cards

Your notebook is equipped with an integrated memory card reader.

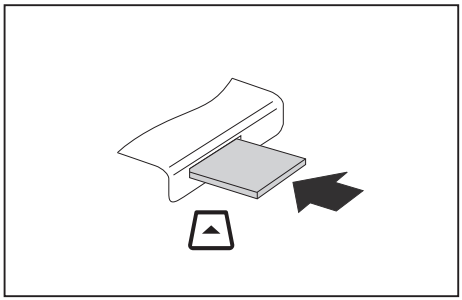
Observe the manufacturer's instructions when handling the memory cards.

Supported format

The memory card reader supports the following format:

- Secure Digital (SD™ card)

Inserting the memory card

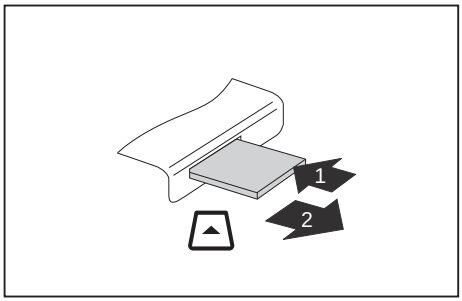


► Carefully slide the memory card into the slot. The label should be facing upward. Do not apply excessive force, as otherwise the delicate contact surfaces could be damaged.

↳ Depending on the particular type used, the memory card may protrude slightly from the slot.

Removing the memory card

In order to protect your data, always follow the correct procedure for removing the card (see the documentation for your operating system).



► On devices with card locking: Press on the storage card (1).

↳ The storage card is released and can now be removed.

► Pull the storage card out of the slot (2).

ExpressCards

An ExpressCard slot allows an ExpressCard/54 to be used with the computer.

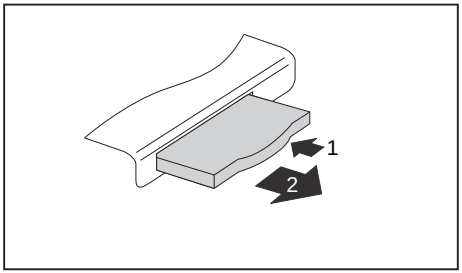
Consult the documentation supplied by the ExpressCard's manufacturer and follow the instructions provided.

Never use force when installing or removing an ExpressCard.

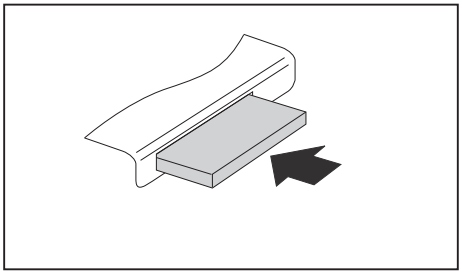
Make sure that no foreign objects enter the ExpressCard slot.

Inserting the card

Keep the placeholder for the slot in a safe place. When you remove the card again, you must reinstall the place holder. This prevents foreign objects from getting into the slot.



- ► Press the edge of the placeholder (1) to make the card placeholder protrude from the notebook's case.
- ► Pull the card placeholder out of the slot (2).



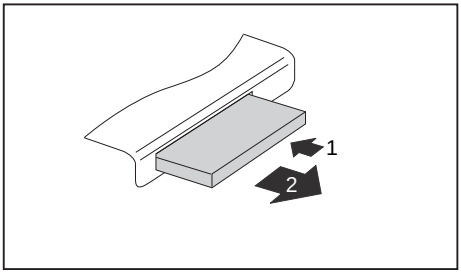
- ► Insert the card into the slot guide with the connection contacts first.
- ► Gently push the card into the slot until you feel it click into place. Do not use any force.

  Depending on the particular type used, the card may protrude slightly from the slot.

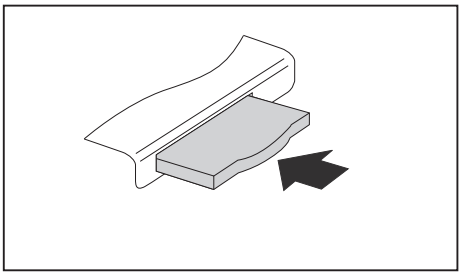
Please see the documentation relating to the card for driver installation instructions.

Removing the card

In order to protect your data, always follow the correct procedure for removing the card (see the documentation for your operating system).



- ► Press the edge of the card (1) so that the card protrudes a little from the notebook.
- ► Pull the card out of the slot (2).



- ► Insert the card placeholder into the slot guide.
- ► Gently slide the card placeholder into the slot until you feel it click into place.

Speakers and microphones

Information on the exact position of the speakers and microphone can be found in "Ports and controls", Page 9.

Please refer to chapter "Key combinations", Page 42 for information on setting the volume and also enabling/disabling the speakers using key combinations.

If you attach an external microphone, the built-in microphone is disabled.

When you connect headphones or external speakers, the built-in speakers are disabled.

Information on connecting headphones and a microphone can be found in "Connecting external devices", Page 76.

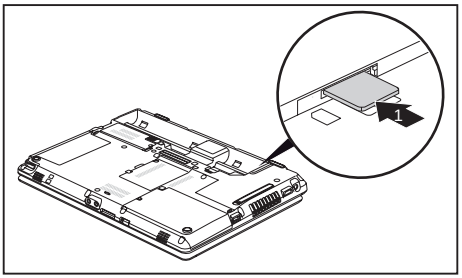
SIM card

A SIM card (Subscriber Identity Module) is a chip card which is inserted in a mobile phone or notebook and, together with an integrated wireless WAN module, enables access to a mobile network.

When handling SIM cards, follow the instructions supplied by the provider.

Inserting the SIM card

► Prepare for installation of the SIM card, see chapter "Preparing to remove components", Page 83.

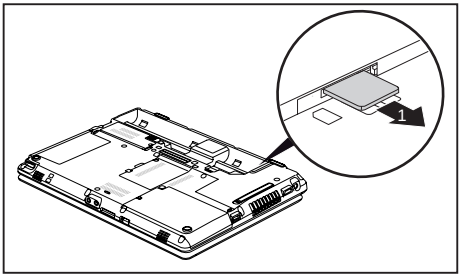


► Slide the SIM card into the slot (1) until it is felt to engage, as shown in the battery compartment.

► Complete the installation, see chapter "Finishing component removal", Page 89.

Removing the SIM card

► Prepare for removal of the SIM card, see chapter "Preparing to remove components", Page 83.



► Press on the edge of the SIM card so that it jumps up slightly out of the slot.

► Pull the SIM card out of the slot in the direction of the arrow (1).

► Complete the removal, see chapter "Finishing component removal", Page 89.

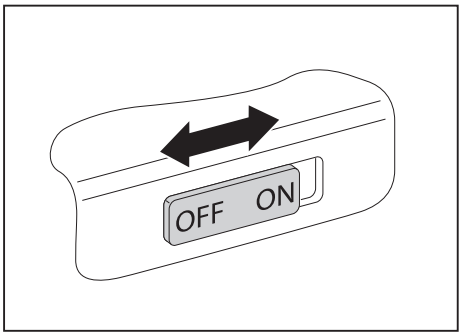
Optional wireless LAN / Bluetooth / 4G wireless components

The installation of radio components not approved by Fujitsu will invalidate the certifications issued for this device.

Depending on the device configuration you ordered, your device will be equipped with wireless LAN, Bluetooth and/or 4G.

Switching the wireless components on and off

Before switching on your device for the first time, the on/off button for radio components must be in the "ON" position.



► Slide the ON/OFF button into the "ON" position to activate the radio components.

or

► Slide the ON/OFF button to the "OFF" position to deactivate the radio components.

If you switch off the radio components, the wireless LAN antenna and, when present, the Bluetooth module and 4G/LTE module will be switched off.

You can also deactivate the wireless components individually in the *BIOS Setup*. For this to occur, you must either not have assigned a supervisor HDD password or if a supervisor HDD password has been assigned, you must know this password.

Pay attention to the additional safety notes for devices with radio components provided in the "Safety/Regulations" manual.

Details on using wireless LAN can be found in the online help system included in the wireless LAN software.

You can find more information on how to use Bluetooth on the CD you received with your Bluetooth software.

You can obtain more information on 4G from your service provider.

Further information on WLAN and Bluetooth

For further information about WLAN or Bluetooth, see "Appendix: Miscellaneous Information".

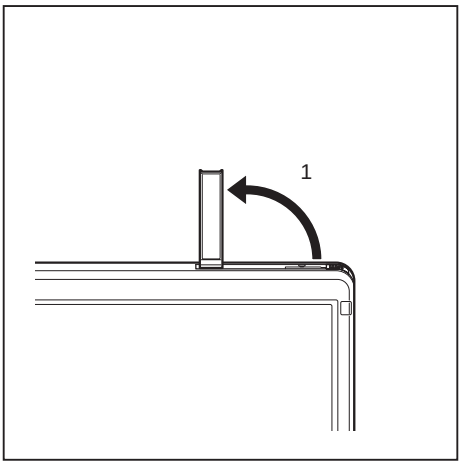
Access via Wireless WAN

You can purchase the accessories for Wireless WAN reception from your Fujitsu dealer.

If you have ordered a Wireless WAN module, your device will already be prepared when you receive it.

You will find information on establishing the connection with the Wireless WAN network in the documentation for the hardware you plan to use.

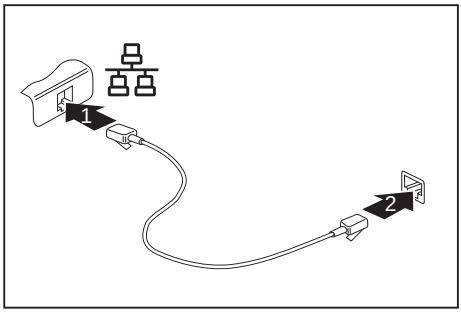
4G antenna



► To improve the signal strength of the 4G, fold out the 4G antenna in the direction of the arrow (1).

Ethernet and LAN

The internal network module of your notebook supports Ethernet LAN. You can use it to establish a connection to a local network (LAN = Local Area Network).



- ► Connect the network cable to the LAN port of the notebook (1).
- ► Connect the network cable to your network connection (2).

Your network administrator can help you to configure and use the LAN connections.

The network cable is not included in the delivery scope. This type of cable can be obtained from a specialist dealer.

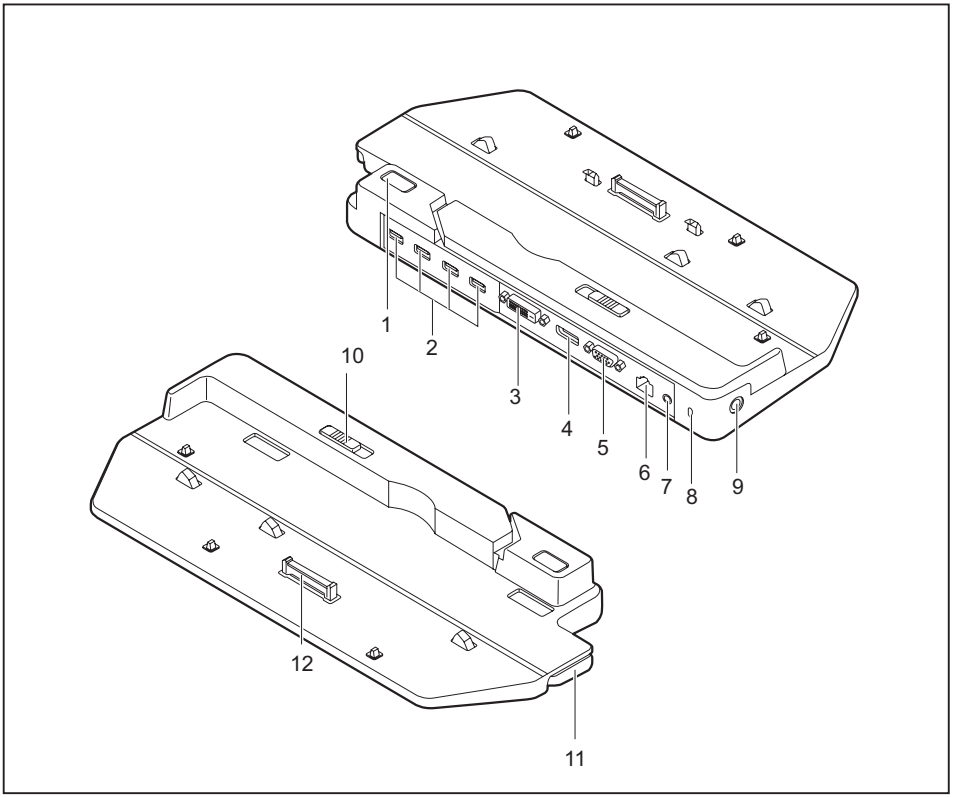
Your port replicator (optional)

Your port replicator is a device that enables you to quickly connect your notebook to your peripherals, such as a monitor, printer etc.

The features offered by the port replicator include standard ports for monitor, audio, mouse and keyboard.

You need only dock the notebook in order to use your peripheral devices.

Ports on the port replicator



1 = ON/OFF button
2 = USB ports (USB 3.0)
3 = DVI port
4 = DisplayPort
5 = VGA monitor port
6 = LAN port
7 = Headphone port
8 = Security Lock device
9 = DC input connector (DC IN)
10 = Adjusting lever of the port replicator
11 = Unlocking lever
12 = Connector on the port replicator for the docking port on the bottom of the notebook

Multi Monitoring

Up to three displays are supported: with the optional Port Replicator you can take multi-tasking to the next level. With the ability of running three monitors you will have enough real-estate to cut from one document and paste to another and keep track of email without closind one app so you can see another. This is the key to beingt efficient in today's business environments.

Setting up the port replicator

Select a suitable location for the port replicator before setting it up. Follow the instructions below when doing so:

- Never place the port replicator on a soft surface (e.g. carpeting, upholstered furniture, bed). This can block the air vents of the notebook and cause overheating and damage.
- Place the port replicator on a stable, flat and non-slip surface. Please note that the port replicator's rubber feet may mark certain types of surface.
- Never place the port replicator and the AC adapter on a heat-sensitive surface.
- Do not expose the port replicator to extreme environmental conditions.

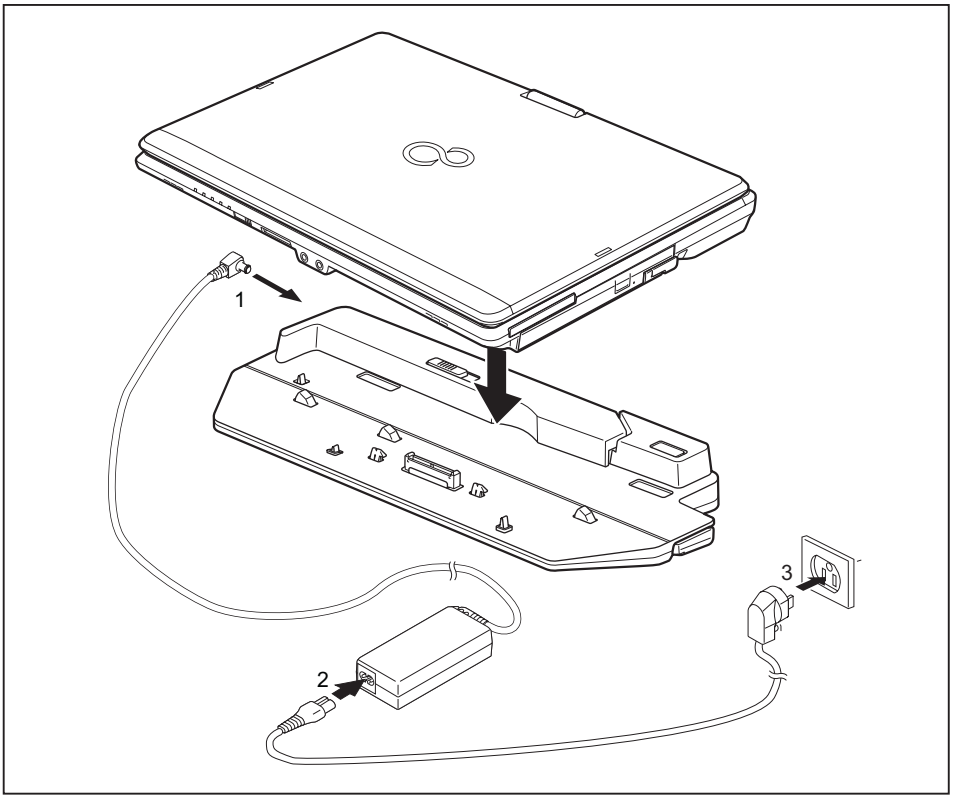
  Protect the port replicator from dust, humidity and heat.

Connect the notebook to the port replicator

The port replicator supports various LIFEBOOK models. The adjusting lever of the port replicator can be used to adapt the port replicator to the size of the particular LIFEBOOK.

Before connecting the notebook to the port replicator, check if the setting lever of the port replicator is in the right position. If necessary, adjust the setting lever to the correct position.

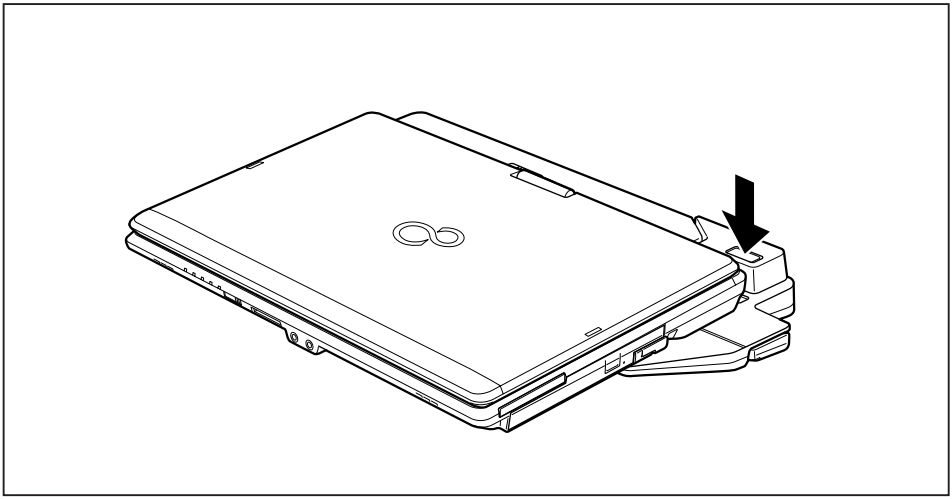
► Disconnect the AC adapter cable from the DC socket (DC IN) of the notebook.



- ► Position the notebook on the port replicator in such a way that the docking connector on the underside of the notebook is aligned with the docking connector of the port replicator as shown.
- ► Press down on the notebook's rear corners so that it locks into position.
- ► Connect the AC adapter cable to the DC jack (DC IN) of the port replicator (1).
- ► Connect the power cable to the AC adapter (2).
- ► Plug the power cable into the power outlet (3).

Power outlets will vary from country to country, see chapter "When travelling in other countries ", Page 14.

Switching on the notebook via the port replicator



► Press the ON/OFF button on the port replicator to switch the notebook on.

Switching off notebook via port replicator

► Close all applications and shut down your operating system (please refer to the manual for the operating system).

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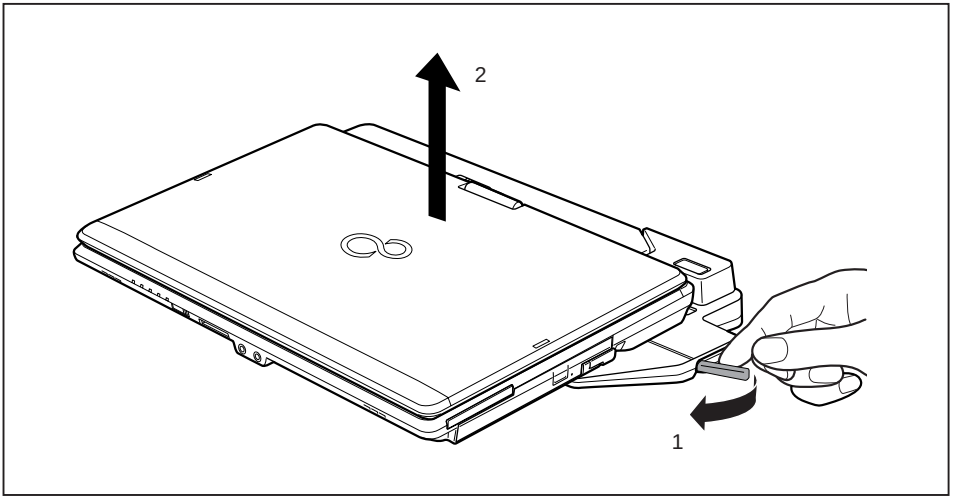
If the notebook cannot be shut down properly, press the ON/OFF button on the port replicator for approx. four seconds. The notebook will switch off. Any unsaved data may however be lost.

Disconnecting the notebook from the port replicator

Problems may occur if the notebook is removed from the port replicator during operation. We recommend that you switch off the notebook beforehand or use the Windows function Start – Undock.

Windows 7

Problems may occur if the notebook is removed from the port replicator during operation. We recommend that you switch off the notebook beforehand or use the Windows function Start (arrow icon) – Undock.



► Pull the release button in the direction of the arrow (1).
► Pick up the notebook (2).

Security functions

Your notebook has several security features that you can use to secure your system from unauthorized access.

This chapter explains how to use each function, and what the benefits are.

Please remember that in some cases, for example, forgetting your password, you may be locked out and unable to access your data. Therefore, please note the following information:

- Make regular backups to external optical disks such as external hard drives, CDs, DVDs or Blu-ray Discs.
- Some security functions need you to choose passwords. Make a note of the passwords and keep them in a safe place.

If you forget your passwords you will need to contact our Service Desk. Deletion or resetting of passwords is not covered by your warranty and a charge will be made for assistance.

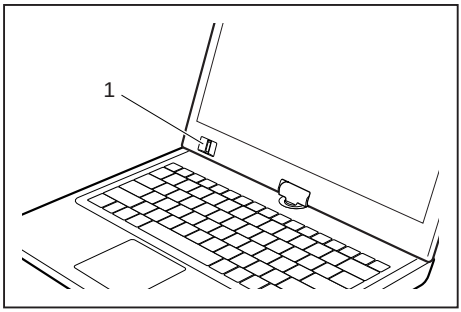
Brief overview of security functions

Detailed information about the security equipment of your device can be found in the "Professional Notebook" manual, on the "Drivers & Utilities" CD/DVD or on the Internet at "http://solutions.us.fujitsu.com".

Security functions	Type of protection	Preparation
Security Lock	Mechanical	Fit and lock the Kensington Lock Cable (accessory).
Fingerprint sensor (depending on the device)	Biometric	Install the supplied fingerprint software.
BIOS password protection	Password protection for *BIOS Setup*, operating system and hard disk with supervisor and user HDD password. The passwords consist of a maximum of eight alphanumeric characters.	Specify at least one supervisor HDD password in the *BIOS Setup* and activate the password protection for the operating system and hard disk as desired.
Boot from removable media	Prevents unauthorized booting of an operating system from external media (e.g. USB stick, USB CD-ROM drive etc.).	In the BIOS Setup, go to the *Security* menu and edit the option *Boot from Removable Media*.
Owner Information	Overlay service desk or owner information during the boot process.	In the BIOS Setup, go to the *Security* menu and edit the option *Owner Information*.
Trusted Platform Module (device dependent)	Identification and authentication of the notebook	Define a supervisor HDD password in the *BIOS Setup* and enable the TPM (*Security Chip*).

Configuring the fingerprint sensor

The fingerprint sensor can record an image of a fingerprint. With additional fingerprint software, this image can be processed and used instead of a password.



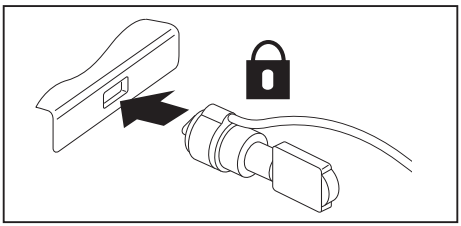
► You must install the fingerprint software in order to be able to use the fingerprint sensor (1).

i For further information about the fingerprint sensor see "Appendix: Miscellaneous Information".

Using the Security Lock

Your device comes with a Security Lock device for the Kensington Lock Cable. You can use the Kensington Lock Cable, a sturdy steel cable, to help protect your notebook from theft. The Kensington Lock Cable is available as an accessory.

i Fujitsu recommends the use of a combination lock.



► Fit the Kensington Lock Cable on the device on your notebook.

i Attach another Kensington Lock Cable to your port replicator to protect your port replicator from theft as well.

Configuring password protection in BIOS Setup Utility

Before using the various options for password protection in the *BIOS Setup utility* to increase data security, please observe the following:

Make a note of the passwords and keep them in a safe place. If you forget your supervisor HDD password you will not be able to access your notebook. Passwords are not covered by your warranty and a charge will be made for assistance.

Your password can be up to eight characters long and contain letters and numbers. No distinction is made between uppercase and lowercase.

Protecting BIOS Setup Utility (supervisor and user HDD password)

If you have opened these operating instructions on the screen, we recommend that you print out the following instructions. Because you cannot call the instructions onto the screen while you are setting up the password.

You prevent unauthorized use of the *BIOS Setup Utility* with both the supervisor and the user HDD password. The supervisor HDD password gives you access to all functions of the *BIOS Setup Utility*, while the user HDD password only provides some of the functions. You can only set a user HDD password if a supervisor HDD password has already been assigned.

Please refer to the ""Settings in BIOS Setup Utility", Page 90 section for a description of how to call up and operate the *BIOS Setup Utility*.

Setting supervisor and user HDD password

- ► Start the *BIOS Setup Utility* and go to the *Security* menu.
- ► Select the *Set Supervisor Password* field and press the Enter key.
- ↳ With *Enter new Password*: you are asked to enter a password.
- ► Enter the password and press the Enter key.
- ↳ *Confirm new Password* requires you to confirm the password.
- ► Enter the password again and press the Enter key.
- ↳ *Changes have been saved* is a confirmation that the new password has been saved.
- ► To set the user HDD password, select *Set User Password* and proceed exactly as when configuring the supervisor HDD password.
- ↳ If you do not want to change any other settings, you can exit *BIOS Setup Utility*.
- ► In the *Exit* menu, select the option *Save Changes & Exit*.
- ► Select *Yes* and press the Enter key.
- ↳ The notebook will be rebooted and the new password will come into effect. It will now be necessary to first enter your supervisor or user HDD password in order to open the *BIOS Setup Utility*. Please note that the user HDD password only provides access to a few of the BIOS settings.

Changing the supervisor or user HDD password

You can only change the supervisor HDD password when you have logged into the *BIOS Setup Utility* with the supervisor HDD password.

► Call the *BIOS Setup Utility* and go to the *Security* menu.
► When changing the password, proceed exactly as for password assignment.

Removing passwords

To remove a password (without setting a new password) perform the following steps:

► Start the *BIOS Setup Utility* and go to the *Security* menu.
► Highlight the *Set Supervisor Password* or *Set User Password* field and press the Enter key.
↳ You will be requested to enter the current password by the *Enter Current Password* prompt.
You will be requested to enter a new password by the *Enter New Password* prompt.
► Press the Enter key twice.
► In the *Exit* menu, select the option *Save Changes & Exit*.
► Select *Yes* and press the Enter key.
↳ The notebook will now reboot with the password removed.
Removing the supervisor HDD password simultaneously deactivates the user HDD password.

Password protection for booting of the operating system

With the supervisor HDD password you have set in the *BIOS Setup Utility* (see section "Setting supervisor and user HDD password", Page 71), you can also prevent booting of the operating system.

Activating system protection

► Start the *BIOS Setup Utility* and go to the *Security* menu.
► Select the *Password on Boot* option and press the Enter key.
► Select the desired option (*Disabled*, *First Boot* or *Every Boot*) and press the Enter key
► Select the *Save Changes & Exit* option under *Exit*.
↳ The notebook will reboot. You will be prompted to enter your password (the supervisor HDD password).

Deactivating system protection

► Start the *BIOS Setup Utility* and go to the *Security* menu.
► Select the *Password on Boot* option and press the Enter key.
► Select the *Disabled* option and press the Enter key.
↳ If you do not want to change any other settings, you can exit *BIOS Setup Utility*.
► Select the *Save Changes & Exit* option under *Exit*.
↳ The notebook will reboot. The system is no longer password-protected.

Password protection for the hard disk

The had disk password prevents unauthorized access to the hard disk drives and is checked internally each time the system is booted. The condition for this is that you have assigned at least the supervisor HDD password.

Activating hard disk protection

► Call up the *BIOS Setup* and select the *Security* menu.
↳ If you have not assigned BIOS passwords yet, define the supervisor and the user HDD password now, if desired (see "Security functions", Page 69).
► Mark the *Hard Disk Security* field and press the Enter key.
► In the *Drive0* area mark the *Set Master Password* field and press the Enter key.
↳ *Enter new Password* then appears and you are asked to enter a password.
► Enter the password and press the Enter key.
↳ *Confirm new Password* requires you to confirm the password.
► Enter the password again and press the Enter key.
↳ *Setup Notice: Changes have been saved* is displayed to confirm that the new password has been saved.
► To assign the password for the second hard disk (*Drive1*), go to the *Drive1* area and select the field *Set Master Password*, then proceed in exactly the same way as for setting up the password for the first hard disk (*Drive0*).
↳ The field *Password Entry on Boot* is set to *Enabled* by default. You can exit the *BIOS Setup* once you have finished changing the settings.
► From the *Exit* menu, choose the option *Exit Saving Changes*.
► Press the Enter key and select *Yes*.
↳ The notebook reboots and your hard disk is now protected with a password. The system will ask you to enter the password when the notebook is restarted again.

Deactivating hard disk protection

To cancel a password without setting a new one, proceed as follows:

► Call up the *BIOS Setup* and select the *Security* menu.
► Mark the *Hard Disk Security* field and press the Enter key.
► In the *Drive0* area mark the *Set Master Password* field and press the Enter key.
↳ You will be initially requested to enter the old password by the *Enter current Password* prompt. You will then be requested to enter a new password by the *Enter new Password* prompt.
► After entering the password, press the Enter key three times.
► From the *Exit* menu, choose the option *Exit Saving Changes*.
► Press the Enter key and select *Yes*.
↳ The notebook reboots, and password protection for the hard disk is cancelled.
► To cancel the password for the second hard disk (*Drive1*), go to the *Drive1* area and select the field *Set Master Password*, then proceed in exactly the same way as for cancelling the password for the first hard disk (*Drive0*).

Using the security function of the tablet keys

If you have allotted a supervisor and/or user HDD password in the form of tablet key combinations as described below, you can use the tablet keys to enter this when you start your device.

Setting the Supervisor password

- ► Select Start - Run.
- ► Enter the following at the command line: `C:\Program Files\Fujitsu\Security Panel Application\Supervisor\FJSECS.EXE`.
- ► Confirm with Enter.
- ► Follow the instructions on the screen.

Setting the User password

- ► Select *Start - All Programs*.
- ► Select *Security Panel Application – Security Panel Application*.
- ► Follow the instructions on the screen.

Entering passwords using the tablet buttons

The passwords to be entered via the tablet buttons are usually composed of a combination of button presses, e.g. button 2 + button 3 followed by button 1 and the ENT button.

- ► Enter your password using the buttons 1 to 4.
- ► Confirm by pressing ENT.

↳ The device will be unlocked.

Trusted Platform Module (TPM) (device-dependent)

To use the TPM, you **must** activate the TPM in the *BIOS Setup* before the software is installed. The condition for this is that you have assigned at least the supervisor HDD password (see "Security functions", Page 69).

Enabling TPM

- Requirement: You have assigned a supervisor HDD password, see "Security functions", Page 69.

► Call up the BIOS Setup and select the *Security* menu.

► Mark the *TPM Security Chip Setting* field and press the Enter key.

► Select *Enabled* to activate the TPM.

↳ Once you have activated the TPM the *Clear Security Chip* option appears.

Select *Clear Security Chip* to delete the holder in the TPM. By clicking on *Enabled*, all secret keys (e.g. SRK - Storage Root Keys, AIK - Attestation Identity Keys etc.) generated by applications are deleted.

Please note that you will then no longer be able to access the data you have encrypted with the keys based on that holder.

► Select the *Exit Saving Changes* option in the Exit menu.

► Press the Enter key and select *Yes*.

↳ The notebook will restart, and TPM will be enabled after the reboot.

Disabling TPM

- Requirement: You have assigned a supervisor HDD password, see "Security functions", Page 69.

► Call up the BIOS Setup and select the *Security* menu.

► Mark the *TPM Security Chip Setting* field and press the Enter key.

► Select *Disabled* to deactivate the TPM.

► From the *Exit* menu, choose the option *Exit Saving Changes*.

► Press the Enter key and select *Yes*.

↳ Your notebook will now restart and TPM will be disabled.

Connecting external devices

Always refer to the safety information provided in "Important notes", Page 12 before connecting or disconnecting any devices to or from your notebook.

Always read the documentation supplied with the device you wish to connect.

Never connect or disconnect cables during a thunderstorm.

Never pull at a cable when disconnecting it. Always grasp the plug.

Follow the steps below in order, when connecting or disconnecting devices to your notebook:

With some devices such as USB devices, it is not necessary to switch off the notebook and the device before connecting/disconnecting. For more information about whether or not devices need to be switched off, please refer to the documentation supplied with the external device.

Some of the external devices require special drivers (see the operating system and external device documentation).

Connecting devices to the notebook

1. Turn off your notebook and all external devices.
2. Unplug your notebook and all devices from the power outlets.
3. Connect the cables for your external devices following the instructions.
4. Plug all power cables into the power outlets.

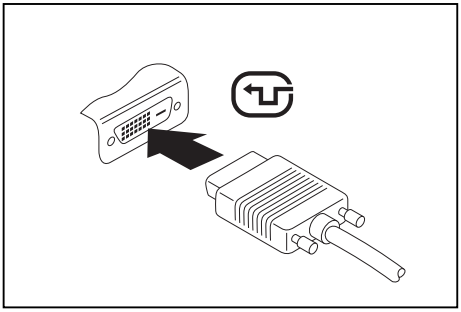
Disconnecting devices from the notebook

1. Turn off your notebook and all external devices.
2. Unplug your notebook and all devices from the power outlets.
3. Disconnect the cables for your external devices following the instructions.

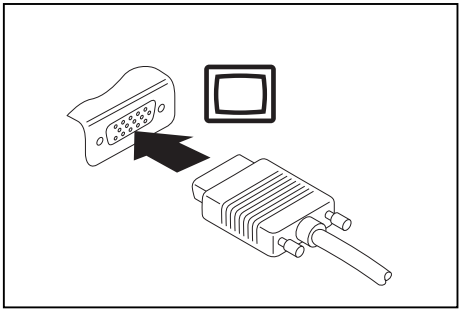
Connecting an external monitor

The port replicator, available as an option for your notebook, offers you a DVI port and a DisplayPort.

An analog monitor is connected to the analog VGA monitor port, a digital monitor to the DVI-I monitor port of the port replicator. Screen output is limited to a maximum of two screens at any one time (see "Key combinations", Page 42, section "Toggle output screen").



Digital DVI monitor port



Analog VGA monitor port

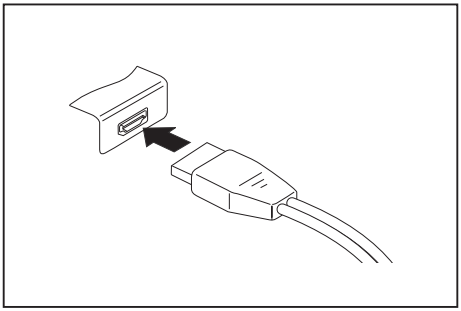
- ► Switch off the notebook and the external monitor.
- ► Plug the data cable of the external monitor into the monitor port.
- ► First switch on the external monitor and then the notebook.

You can also switch back and forth between the external monitor and the notebook's LCD monitor, see chapter "Key combinations", Page 42.

You can display the same picture on the external monitor and the notebook LCD screen simultaneously.

Connecting an external monitor to the DisplayPort

It is possible to connect a digital monitor to the DisplayPort on the port replicator. Screen output is limited to a maximum of two screens at any one time (see "Key combinations", Page 42, section "Toggle output screen").



Digital DisplayPort

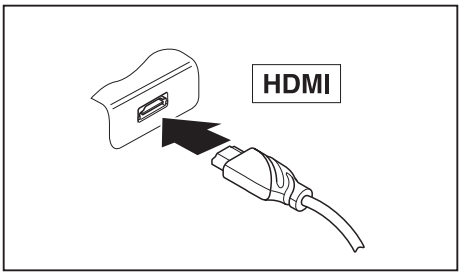
- ► Switch off the notebook and the external monitor.
- ► Plug the data cable of the external monitor into the monitor port.
- ► First switch on the external monitor and then the notebook.

You can also switch between the external monitor and the LCD monitor of the notebook, see chapter "Key combinations", Page 42.

You can display the same picture on the external monitor and the notebook LCD monitor simultaneously.

HDMI port

The HDMI port on your notebook can be used to connect an external amplifier, LCD TV or a plasma TV with an HDMI connection.



- ► Connect the data cable to the external device.
- ► Connect the data cable to the HDMI port of the notebook.

Connecting USB devices

On the USB ports, you can connect external devices that also have a USB port (e.g. a DVD drive, a printer, a scanner or a modem).

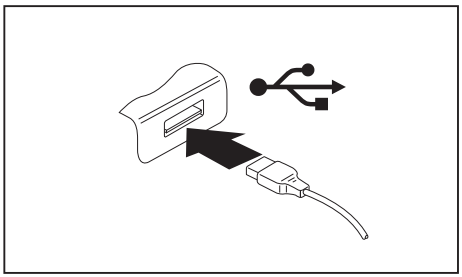
USB devices are hot-pluggable. This means you can connect and disconnect devices while your operating system is running.

USB 1.x has a maximum data transfer rate of 12 Mbps.

USB 2.0 has a data transfer rate of up to 480 Mbps.

USB 3.0 has a data transfer rate of up to 5 Gbit/s.

Additional information can be found in the documentation for the USB devices.



- ► Connect the data cable to the external device.
- ► Connect the data cable to a USB port of the notebook.

Device drivers

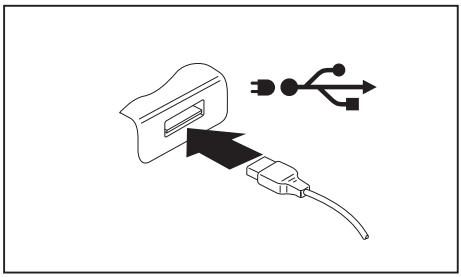
USB devices will be automatically recognized and installed by your operating system.

USB port with charging function (Anytime USB charge)

It is recommended that the notebook be operated with the power supply connected whenever the USB port with charging function is in use, as this function will drain the battery more quickly if an external USB device is being charged.

The power supply unit must already be connected when the notebook is switched off, as otherwise the USB charging function will be disabled and the connected USB devices will not be charged.

Some USB devices (e.g. mobile telephones) require a driver in order to utilize the USB charging function. In this case the USB charging function will not work when the notebook is switched off, as no drivers are active when the notebook is switched off.



You can use this USB port to charge or supply power to a USB device (e.g. to charge a PDA or a mobile phone or to connect a USB lamp), even if the notebook is switched off.

How to remove USB devices correctly

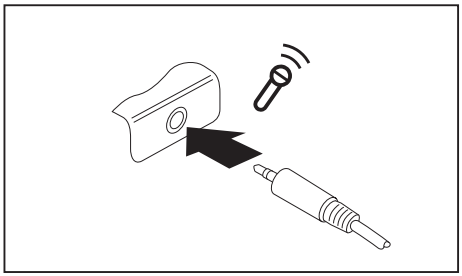
Always correctly remove the device according to the rules described below, to ensure that none of your data is lost.

- ► Left click on the icon to safely remove hardware, located in the taskbar.
- ► Select the device which you want to shut down and remove.
- ► Press the Enter key.
- ↳ Wait for the dialog box which tells you that it is now safe to remove the device.

Connecting external audio devices

Microphone port/Line In

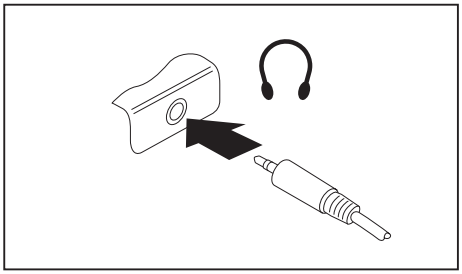
The microphone port/Line In allows you to connect an external microphone, a MiniDisc player, MP3 player, CD player or a tape deck to your notebook.



- ► Connect the audio cable to the external device.
- ► Connect the audio cable to the microphone port/Line In of the notebook.

Headphone port

You can connect headphones or external speakers to your notebook via the headphone port.



- ► Connect the audio cable to the external device.
- ► Connect the audio cable to the headphone port of the notebook.
- ↳ The internal speakers are disabled.

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If you purchase a cable from a retailer, please note the following information:

The headphone port on your notebook is a "3.5 mm jack socket".

If you want to connect headphones or a speaker you will need a "3.5 mm jack plug".

Removing and installing components during servicing

Only qualified technicians should repair your notebook. Unauthorized opening or incorrect repair may greatly endanger the user (electric shock, fire risk) and will invalidate your warranty.

After consulting the Hotline/Service Desk, you may remove and install the components described in this chapter yourself.

If you remove and install components without consulting the Hotline/Service Desk, then the warranty of your notebook will be voided.

Notes on installing and removing boards and components

- Switch the notebook off and pull the power plug out of the power outlet.
- Always remove the battery.
- Take care when you use the locking mechanisms on the battery and any other component.
- Never use sharp objects such as screwdrivers, scissors or knives as leverage to remove covers.

Boards with electrostatic sensitive devices (ESD) are marked with the label shown.

When handling boards fitted with ESDs, you must always observe the following points:

- You must always discharge static build up (e.g. by touching a grounded object) before working.
- The equipment and tools you use must be free of static charges.
- Remove the power plug from the AC supply before inserting or removing boards containing ESDs.
- Always hold boards with ESDs by their edges.
- Never touch pins or conductors on boards fitted with ESDs.

Preparing to remove components

If you are going to remove or change system components, prepare for the removal as follows:

Please observe the safety information in chapter "Important notes", Page 12.

Remove the power plug from the power outlet!

► Switch the device off.

The device must not be in energy-saving mode!

► Close the LCD screen.
► Remove all the cables from the device.
► Turn the device over and place it on a stable, flat and clean surface. If necessary, lay an anti-slip cloth on this surface to prevent the device from being scratched.
► Remove the battery (see "Removing the battery", Page 48).

Installing and removing memory expansion

If you are asked by the Hotline/Service Desk to remove and install the memory expansion yourself, proceed as follows:

Please observe the safety information in chapter "Important notes", Page 12.

When installing/removing memory modules, the battery must be removed from the notebook and the notebook must not be connected to the power supply, see "Preparing to remove components", Page 83.

Only use memory expansion modules that have been approved for your notebook (see "Technical data", Page 99).

Never use force when installing or removing a memory extension.

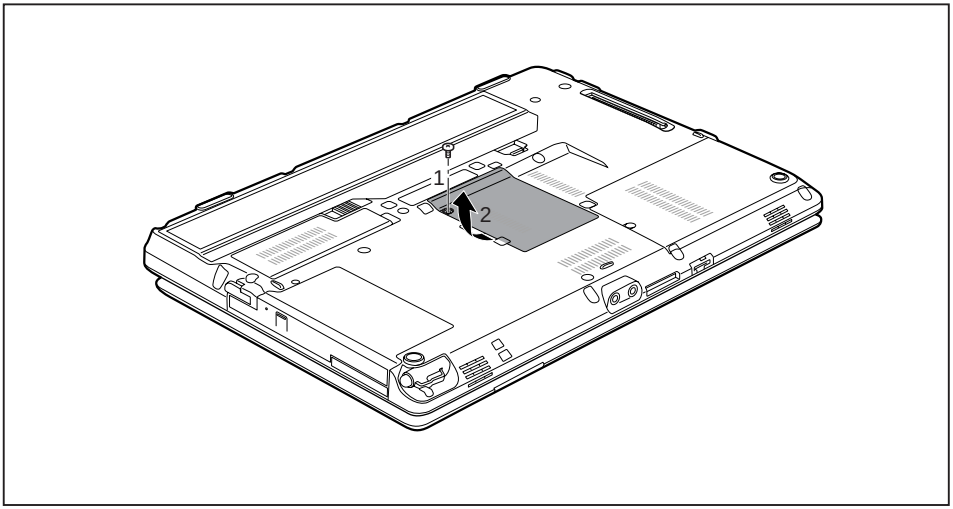
Make sure that foreign objects do not fall into the memory extension compartment.

You must open the service compartment to remove or install a memory module. On some devices, opening the compartment may expose other components. These components should be removed and replaced only by authorized specialists. Therefore, be sure to observe the following:

Individual components can become very hot during operation. Therefore, we recommend that you wait one hour after switching off the notebook before removing or installing memory modules. Otherwise, there is a risk of suffering burns!

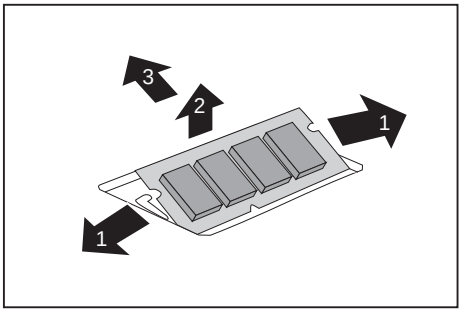
As some components are exposed that are sensitive to static electricity, please take note of chapter "Notes on installing and removing boards and components", Page 82.

Removing a cover



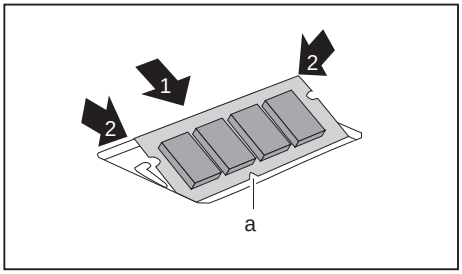
► Remove the screw (1).
► Pull off the cover from the notebook in the direction of the arrow (2).

Removing memory modules



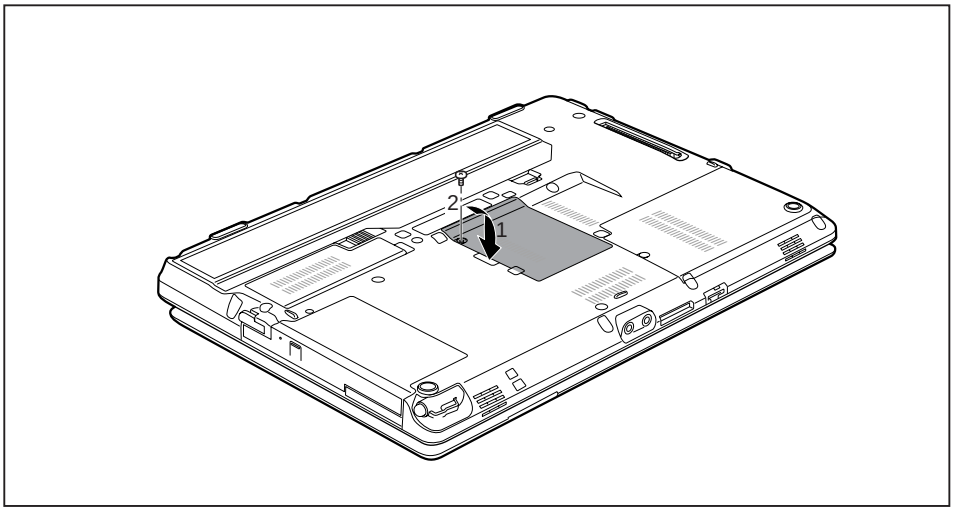
► Carefully push the two mounting clips outwards (1).
↳ The memory module snaps upwards (2).
► Pull the memory module out of its slot in the direction of the arrow (3).

Installing a memory module



- ► Insert the memory module with the contacts and the recess (a) facing the slot (1).
- ► Carefully push the memory module downwards until you feel it click into place (2).

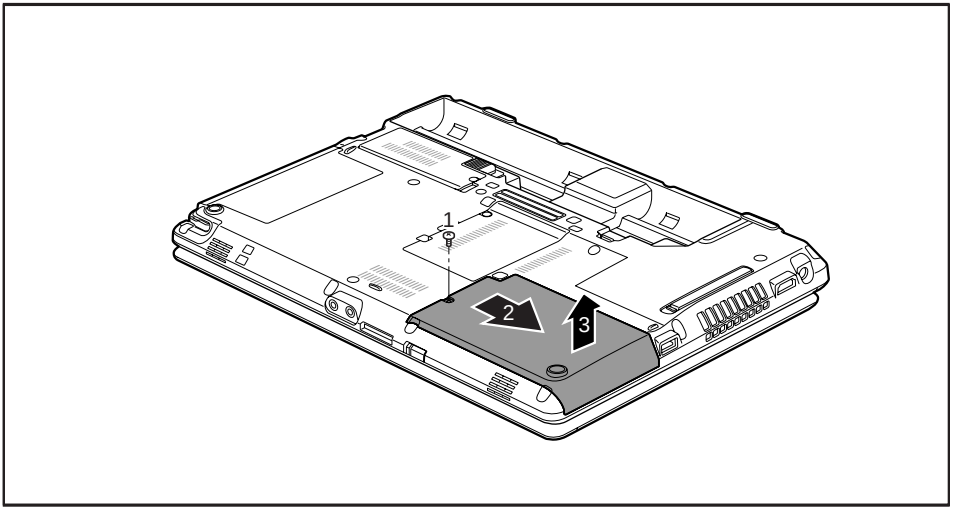
Attaching the cover



- ► Place the cover into position, following the direction of the arrow (1).
- ► Fasten the cover with the screw (2).
- ► Install the battery again (see "Removing and installing the battery", Page 47).
- ► Turn the notebook the right way up again and place it on a flat surface.
- ► Reconnect the cables that were previously disconnected.

Removing and installing the hard disk

Removing a cover

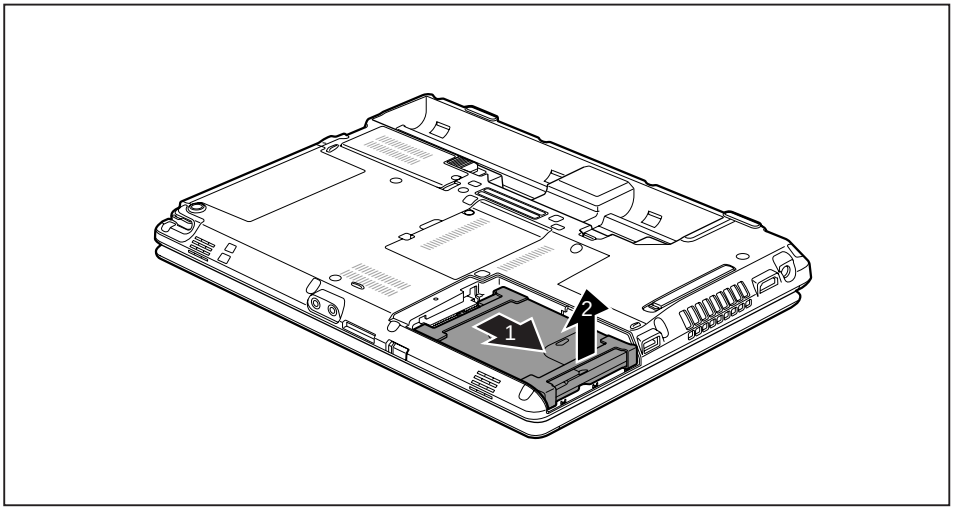


► Remove the screw (1).

Keep the screw in a safe place. If you are removing more than one component at the same time, store the screws for the individual components separate from each other. If you install the wrong screws, components may be damaged.

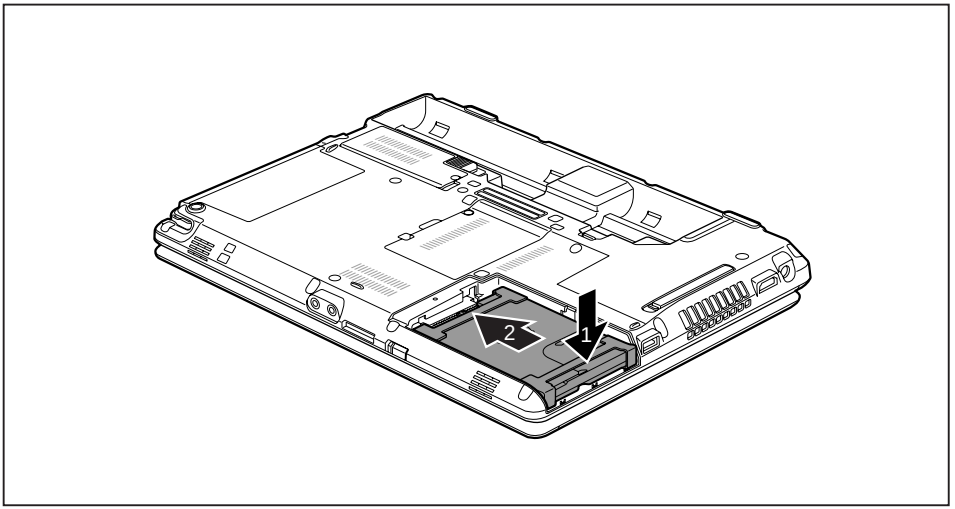
► Slide the cover in direction of the arrow (2).
► Lift the cover off the notebook (3).

Removing a hard disk



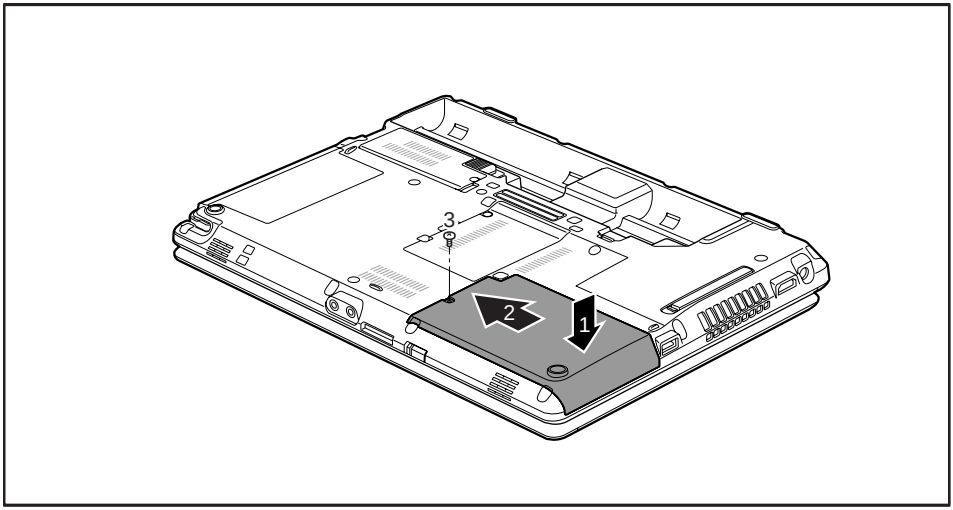
► To release the hard disk from the contacts, pull it in the direction of the arrow (1).
► Remove the hard disk from the hard disk compartment (2).

Installing a hard disk



► Place the hard disk into the hard disk compartment (1).
► Push the hard disk in the direction of the arrow (2) until the contacts of the hard disk engage.

Attaching the cover



- ► Place the cover in the correct mounting position (1).
- ► Slide the cover in the direction of the arrow (2).
- ► Tighten the screw (3).

Finishing component removal

After you have removed or changed the system components as you required, please prepare your device for operation again as follows:

- ► Install the battery again (see "Inserting battery", Page 49).
- ► Turn the notebook the right way up again and place it on a flat surface.
- ► Reconnect the cables that you disconnected before.

Settings in BIOS Setup Utility

The *BIOS Setup Utility* allows you to set the system functions and the hardware configuration for the notebook.

When it is delivered, the notebook is set to factory default settings. You can change these settings in *BIOS Setup Utility*. Any changes you make take effect as soon as you save and exit the *BIOS Setup Utility*.

The *BIOS Setup Utility* program contains the following menus:

About	Displays information relating to the BIOS, processor and notebook
System	Advanced system settings
Advanced	Configuration of various hardware components, such as mouse, keyboard, processor
Security	Password settings and security functions
Boot	Configuration of the start-up sequence
Exit	Exits the *BIOS Setup Utility*

Starting the BIOS Setup Utility

► Reboot the device (switch off/on or reboot the operating system).

↳ The following or a similar display appears on the screen at start-up:

```
<F2> BIOS Setup <F12> Boot Menu
```

► Press the function key F2.

► If a password has been assigned, enter the password and press the Enter key.

If you have forgotten the password, contact your system administrator or contact our customer service centre.

The *BIOS Setup Utility* starts.

Operating BIOS Setup Utility

Press the F1 key to display help on the operation of the *BIOS Setup Utility*. The description of the individual settings is shown in the right-hand window of the *BIOS Setup Utility*.

With the F9 key you can load the default settings of the *BIOS Setup Utility*.

► Use the cursor keys ← or → to select the menu you wish to access to make changes.

↳ The menu is displayed on the screen.

► Select the option you want to change with the cursor keys ↑ or ↓.

► Press the Enter key.

► Press the ESC key to exit the selected menu.

► For future reference, make a note of the changes you have made (for example, in this manual).

Exiting BIOS Setup Utility

You need to select the desired option in the *Exit* menu and activate it by pressing the Enter key:

Exit Saving Changes - save changes and exit BIOS Setup Utility

► To save the current menu settings and exit the *BIOS Setup Utility*, select *Exit Saving Changes* and *Yes*.

↳ The notebook is rebooted and the new settings come into effect.

Exit Discarding Changes – Discard changes and exit BIOS Setup Utility

► To discard the changes, select *Exit Discarding Changes* and *Yes*.

↳ The settings in place when *BIOS Setup Utility* was called remain effective. *BIOS Setup Utility* is terminated and the notebook is rebooted.

Load Setup Defaults – Copy Standard Entries

► To copy the standard entries for all menus of the *BIOS Setup Utility*, choose *Load Setup Defaults* and *Yes*.

Discard Changes – Discard changes without exiting the BIOS Setup Utility

► To discard the changes you have made, select *Discard Changes* and *Yes*.

↳ The settings in place when *BIOS Setup Utility* was called remain effective. You can now make additional settings in the *BIOS Setup Utility*.

► If you want to exit*BIOS Setup Utility*with these settings, select *Exit Saving Changes* and *Yes*.

Save Changes - save changes without exiting the BIOS Setup Utility

► To save the changes, select *Save Changes* and *Yes*.

↳ The changes are saved. You can now make additional settings in the BIOS Setup Utility.

► If you want to exit BIOS Setup Utility with these settings, choose *Exit Saving Changes* and *Yes*.

Save Changes and Power Off

► To save the changes and switch off your device, select *Save Changes and Power Off* and *Yes*.

↳ The changes are saved. Your device is shut down.

Troubleshooting and tips

If a fault occurs, try to correct it as described. If you fail to correct the problem, proceed as follows:

- ► Make a note of the steps and the circumstances that led to the fault. Also make a note of any error messages displayed.
- ► Switch the notebook off.
- ► Please contact the Hotline/Service Desk.

You can contact Fujitsu Service and Support in the following ways:

- Toll free: 1-800-Fujitsu (1-800-838-5487)
- Website: "http://solutions.us.fujitsu.com/www/content/support/contact/index.php"

Please have the following information ready when you call:

- The model name and serial number of the notebook. The serial number is located on a sticker on the underside of the notebook.
- Notes of any messages that appear on the screen and information on acoustic signals.
- Any changes you have made to the hardware or software since receiving the notebook.
- Any changes you have made to the *BIOS Setup* settings since receiving the notebook.
- Your system configuration and all peripheral devices connected to your system.
- Your sales contract.

Our notebooks have been designed primarily with mobile applications in mind. This means that considerable effort has been made to optimize components and equipment in terms of weight, space and energy requirements. Depending on the particular configuration you have purchased, it is possible that functionality may be slightly reduced compared to a desktop PC if you are running processor-intensive gaming software, e.g. games with intensive 3D graphics. Updating your hardware with drivers which have not been approved by Fujitsu may result in performance losses, data losses or malfunction of the equipment. A list of approved drivers and current BIOS versions can be downloaded from: "http://solutions.us.fujitsu.com"

Help if problems occur

Should you encounter a problem with your computer that you cannot resolve yourself:

- ► Note the ID number of your device. The ID number is found on the type rating plate on the back or underside of the casing.
- ► For further clarification of the problem, contact the Fujitsu Service Desk. When you do this, please have ready the ID number and serial number of your system.

Recovering your Factory Image

In the event you need to restore your original Factory Image refer to the steps in "Appendix: Miscellaneous Information".

The notebook's date or time is incorrect

Cause	Troubleshooting
Time and date are incorrect.	► With the *BIOS-Setup-Utility*, you can set the date and time in the *main* menu.
If the time and date are still set incorrectly after switching on the notebook.	► Please contact your sales outlet or our Hotline/Service Desk.

Battery indicator does not illuminate

Cause	Fault elimination
The battery is not installed correctly.	► Switch the notebook off. ► Check whether the battery is installed correctly in its compartment. ► Switch the notebook on.
The battery is fully discharged.	► Charge the battery. **or** ► Install a charged battery. **or** ► Connect the notebook to a power outlet using the AC adapter.

When certain characters are entered on the keyboard, only numerals are written

Cause	Troubleshooting
The virtual numeric keypad of your device is activated, see "Virtual numeric keypad", Page 41	► Press the Num key.

The notebook's LCD screen remains blank

Cause	Troubleshooting
Monitor is switched off.	► Press a key or touch the touchpad.
External monitor or television set connected.	► Press the key combination to switch the screen output, see "Key combinations", Page 42.

The LCD screen is difficult to read

Cause	Troubleshooting
Reflected glare	► Turn the notebook or alter the tilt of the LCD screen. ► Increase the brightness of the screen.

The external monitor remains blank

Cause	Troubleshooting
Monitor is switched off.	► Switch the external monitor on.
Power saving has been activated (monitor is blank).	► Press any key to continue.
Brightness is set to dark.	► Adjust the brightness of the monitor.
Screen output is set to the notebook's LCD screen	► Press the key combination to switch the screen output, see "Key combinations", Page 42.
The external monitor's power cable or data cable is not connected properly.	► Switch off the external monitor and the notebook. ► Check whether the power cable is plugged properly into the external monitor and into the power outlet. ► Check whether the data cable is properly connected to the notebook and the external monitor (if it is plugged in with a connector). ► Switch on the external monitor and the notebook.

The external monitor is blank or the image is unstable

Cause	Troubleshooting
The wrong external monitor has been selected or the wrong screen resolution has been set for the application program.	► Terminate the application program in Windows by pressing Alt + F4. If the fault persists after closing the program, use the key combination for switching the screen output (see "Key combinations", Page 42) to switch over to the notebook's LCD screen. Change the following setting: ► Set the screen resolution: Set the screen resolution as described in the documentation for your operating system. ► Select monitor: Select monitor 1 or 2 as described in the documentation for your operating system.

The cursor does not correctly follow the pen movements

Cause	Fault elimination
Pen incorrectly calibrated	► Calibrate the pen as shown under *Hardware and Sound / Tablet PC Settings* in the Control Panel, see "Setting the pen", Page 35 and "Calibrating the pen", Page 36.

Pen input not working

Cause	Troubleshooting
Incorrect driver installed.	► If your device is one which can only be operated using the pen, install the driver for the standard model. **or** ► If your device is one which can be operated using the pen and by finger, install the driver for the "Dual Digitizer" model.

The notebook cannot be started

Cause	Troubleshooting
The battery is not installed correctly.	► Check whether the battery is installed correctly in its compartment. ► Switch the notebook on.
The battery is dead.	► Charge the battery. **or** ► Insert a charged battery. **or** ► Connect the AC adapter to the notebook.
The power adapter is not connected correctly.	► Check whether the AC adapter is connected correctly to the notebook. ► Switch the notebook on.

The notebook stops working

Cause	Troubleshooting
Notebook is in energy saving mode.	► Leave energy saving mode.
An application program has caused the malfunction.	► Close the application program or restart the notebook (by restarting the operating system or switching the device off and back on again).
The battery is dead.	► Charge the battery. **or** ► Insert a charged battery. **or** ► Connect the AC adapter to the notebook.

The printer does not print

Cause	Troubleshooting
The printer is not switched on.	► Make sure that the printer is switched on and ready for operation (refer to the documentation supplied with the printer).
The printer is not connected correctly.	► Check that the data cable connecting the notebook to the printer is properly connected.
The printer driver is faulty or not correctly installed, or it is the wrong printer driver.	► Check that the data cable connecting the notebook to the printer is properly connected. ► Check whether the correct printer driver is loaded (refer to the printer documentation).

The radio connection to a network does not work

Cause	Troubleshooting
The wireless component is disabled.	► Switch the radio component on (see "Switching the wireless components on and off", Page 61).
The wireless component is enabled. Despite this, the wireless connection to a network does not work.	► Check whether the radio connection is switched on via the software. ► Further information on using the radio component can be found in the help files.

The battery discharges too quickly

Cause	Troubleshooting
The battery is either too hot or too cold. In this case the battery indicator flashes.	► Bring the notebook up/down to a normal temperature again. ► If the operating time of the battery life is extremely short, the battery is probably too old. Replace battery if necessary.
You may have an application running that consumes a great deal of power due to frequent accessing of the hard disk or optical drive.	► Use the AC adapter as frequently as possible.
The maximum brightness may have been set for the screen.	► Set the screen slightly darker with the key combination for *Decreasing the screen brightness* in order to reduce the amount of power being drawn.

Acoustic warnings

Cause	Troubleshooting
A beep sounds every few seconds. The battery is almost flat.	► Charge the battery.

Error messages on the screen

This section describes the error messages generated by the BIOS Setup. Error messages displayed by the operating system or programs are described in the relevant documentation.

If the error message appears repeatedly, despite troubleshooting measures, please contact the place of purchase or our customer service centre.

Error message/cause	Resolution
CMOS battery bad If the error message occurs repeatedly, the buffer battery in the notebook is flat.	► Contact your sales outlet or our customer service centre.
System CMOS checksum bad - default configuration used The system configuration information is incorrect.	► Switch the notebook off. ► Switch the notebook on. ► Press the function key F2 to access the *BIOS Setup*. ► In the *BIOS Setup*, select the *Exit* menu. ► Select the entry *Load Setup Defaults*. ► Select *OK* and press the Enter key.

Error message/cause	Resolution
Extended memory failed at offset: xxxx Failing Bits: zzzz zzzz When testing the extended memory an error has resulted at the address xxxx.	► Check whether the additional memory module has been inserted correctly.
Failure Fixed Disk n The settings of the hard disk drive are incorrect.	► Start the *BIOS Setup* (*Primary Master* submenu) and select the correct settings.
Keyboard controller error	► Switch the notebook off with the ON/OFF button. ► Wait 3 - 5 seconds and switch on the notebook again.
Keyboard error	If you are using an external keyboard: ► Check the connection and reboot the notebook.
nn Stuck key	► Make sure that no key is pressed.
Operating system not found	► Check in the *BIOS Setup* whether your hard disk has been set correctly. ► Make sure that the operating system is installed on the corresponding drive.
Press <F1> to resume, <F2> to SETUP This error message appears if an error occurs during the self-test before starting the operating system.	► Press the F1 function key to start the operating system. ► Press the function key F2 to access the *BIOS Setup*.
Previous boot incomplete - Default configuration used Due to an error during the previous system boot, default values were used for certain settings. Check the settings in the BIOS Setup.	► Press the F1 function key when prompted to do so.
Real time clock error	► Contact your sales outlet or our customer service centre.
nnnnK Shadow RAM failed at offset: xxxx Failing Bits: zzzz	► Contact your sales outlet or our customer service centre.
System battery is dead - Replace and run SETUP	► Contact your sales outlet or our customer service centre.
System cache error - Cache disabled	► Contact your sales outlet or our customer service centre.
System timer error	► Contact your sales outlet or our customer service centre.

Technical data

Notebook

General	
Processor	4th Generation Intel® Core™ with vPro™ technology (vPro optional, depending on configuration)
Main memory (SO DIMM)	Maximum 12 GB DDR3 1 fixed slot with 4GB (soldered) 1 slot for 2 GB, 4 GB or 8 GB modules
Electrical data	
Safety regulations complied with	CE
Protection class	II
Maximum power draw (when the notebook is switched on and the battery is charged):	80 W (with and without connected port replicator)
LCD screen	
Size	31.75 cm / 12.5" TFT HD
Resolution	1366 x 768 (HD), 16 mio. colors
Pixel class	II
Brightness control	12 levels
Technology	Wide-View High-Bright HD Display with LED Background Lighting
Digitizer and glass panel	• Dual Digitizer • Matter Touchscreen • Toughened glass
Webcam	Full-HD camera (1080 p), with status indicator
Graphics card	
Chip	Intel® HD Graphics 4600
Maximum resolution on external display:	1920 x 1200 pixels, 16 mio. colors on port replicator: • VGA: 1920 x 1200 pixels • DVI: 1920 x 1200 pixels • DisplayPort: 2560 x 1600 pixels
Dimensions	
Width x depth x height	315.6 mm x 233 mm x 37.5-33.5 mm / 19.99 in x 14.76 in x 1.48–1.32 in with rubber feet
Weight depending on configuration	from 1.8 kg / 3.97 lbs
Input devices	
Keyboard	85 buttons, splash-protected
Touchpad	2 keys

Tablet buttons	5 buttons + 1 Windows button
Pen	1 freely programmable rocker button / eraser
Slots	
Memory card slot	1 x SD Card
ExpressCard slot	1 x ExpressCard/54
SIM card slot	1 x
Ports	
Monitor port (analog)	15-pin socket
HDMI port	1 x
LAN port	Socket, RJ45
Microphone port/Line In	3.5 mm stereo mini jack
Headphones port/Line Out	3.5 mm stereo mini jack
Docking port	100-pin socket
USB (Universal Serial Bus)	Total: 3 x USB (1 x USB 3.0 with charging function (Anytime USB charge), 2 x USB 2.0)
Security Lock	1 x
Ambient conditions	
Environment class DIN IEC 721	7K1
Mechanism class DIN IEC 721	7M2
Operating temperature	5°C .... 35°C / 41°F .... 95°F
Transport temperature (2K2)	–15°C .... 60°C / 5°F .... 140°F

Port replicator (optional)

Electrical data	
Safety regulations complied with	CE
Protection class	II
Ports	
Monitor port (analog)	15-pin
Monitor port (digital)	25-pin, DVI-D
DisplayPort	1 x
LAN port	RJ45
USB (Universal Serial Bus)	4 x USB 3.0
Audio	Headphone port
Docking port	100-pin
Security Lock	1 x
Ambient conditions	
Environment class DIN IEC 721	7K1
Mechanism class DIN IEC 721	7M2
Operating temperature	5°C .... 35°C / 41°F .... 95°F
Transport temperature	–15°C .... 60°C / 5°F .... 140°F

Rechargeable battery

You will find information on the batteries used in your device on the Internet at "http://solutions.us.fujitsu.com/www/content/support/contact/index.php".

In addition to the main battery, you can order an optional battery which is inserted in the module slot.

All rechargeable batteries are 6-cell batteries.

	Main battery	**Optional battery (to be inserted in the module bay)**
Rated voltage	10.8 V	10.8 V
Rated capacity	72.4 Wh	28.1 Wh
Nominal power	6700 mAh	2600 mAh

The operating time depends on the device configuration, the active applications and the energy-saving settings.

AC adapter for use with the notebook and port replicator

The following technical data applies to the AC adapter supplied with the notebook and to the port replicator which you can order optionally.

Primary	
Rated voltage	100 V to 240 V (automatic)
Rated frequency	50 Hz to 60 Hz (automatic)
Max. rated current	0.7 A to 1.2 A
Secondary	
Nominal power	80 W
Rated voltage	19 V
Max. rated current	4.22 A

An additional AC adapter or power cable can be ordered at any time.

Manufacturer’s notes

Disposal and recycling

You can find information on this subject on your notebook or on our website ("http://solutions.us.fujitsu.com/www/content/products/trade-in_program/").

Recycling your battery

Over time, the batteries that run your mobile computer will begin to hold a charge for a shorter amount of time; this is a natural occurrence for all batteries. When this occurs, you may want to replace the battery with a fresh one*. If you replace it, it is important that you dispose of the old battery properly because batteries contain materials that could cause environmental damage if disposed of improperly.

Fujitsu is very concerned with environmental protection, and has enlisted the services of the Rechargeable Battery Recycling Corporation (RBRC)**, a nonprofit public service organization dedicated to protecting our environment by recycling old batteries at no cost to you.

RBRC has drop-off points at tens of thousands of locations throughout the United States and Canada. To find the location nearest you, go to "www.RBRC.org" or call 1-800-822-8837.

If there are no convenient RBRC locations near you, you can also go to the EIA Consumer Education Initiative website "http://EIAE.org/ " and search for a convenient disposal location.

Remember – protecting the environment is a cooperative effort, and you should make every effort to protect it for current and future generations.

* To order a new battery for your Fujitsu mobile computer, go to the Fujitsu shopping site at "www.shopfujitsu.com" in the US or "www.fujitsu.ca/products/notebooks" in Canada.

** RBRC is an independent third party to which Fujitsu provides funding for battery recycling; RBRC is in no way affiliated with Fujitsu.

Declarations of Conformity

This device complies with Part 15 of the FCC rules. Operations are subject to the following two conditions: (1) This device may not cause harmful interference, (2) This device must accept any interference received, including interference that may cause undesired operation.

Regulatory notices

FCC Notices

NOTICE:

Changes or modifications not expressly approved by Fujitsu could void this user's authority to operate the equipment.

Notice to Users of Radios and Television

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet that is on a different circuit than the receiver.
- Consult the dealer or an experienced radio/TV technician for help.

DOC (Industry CANADA) notice

Radios and Television

This Class B digital apparatus meets all requirements of Canadian Interference-Causing Equipment Regulations.

CET appareil numérique de la class B respecte toutes les exigence du Réglement sur le matérial brouilleur du Canada.

UL Notice

This unit requires an AC adapter to operate. Only use UL Listed I.T.E. adapters with an output rating of 19 VDC, with a minimum current of 3.42 (65W). The correct output rating is indicated on the AC adapter label. Refer to the illustration below for the correct AC Adapter output polarity:

When using your notebook equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons, including the following:

- Do not use this product near water for example, near a bathtub, washbowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
- Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.

For Authorized Repair Technicians Only

CAUTION:

For continued protection against risk of fire, replace only with the same type and rating fuse.

WARNING:

Danger of explosion if Lithium (CMOS) battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer.

Dispose of used batteries according to the manufacturer's instructions.

FCC Regulatory information

Federal Communications Commission statement

This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause interference, and

(2) this device must accept any interference, including interference that may cause undesired operation of this device.

FCC Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the distance between the equipment and the receiver.
3. Connect the equipment to an outlet on a circuit different from the one the receiver is connected to.
4. Consult the dealer or an experienced radio/TV technician for help.

Please note the following regulatory information related to the optional radio device.

FCC Radio Frequency Exposure statement

This radio device has been evaluated under FCC Bulletin OET 65C and found compliant with the requirements as set forth in CFR 47 Sections 2.1091, 2.1093, and 15.247 (b) (4) addressing RF Exposure from radio frequency devices. The radiated output power of this radio device is far below the FCC radio frequency exposure limits. Nevertheless, this device shall be used in such a manner that the potential for human contact during normal operation is minimized. When using this device, a certain separation distance between antenna and nearby persons must be maintained to ensure RF exposure compliance. In order to comply with RF exposure limits established in the ANSI C95.1 standards, the distance between the antennas and the user should not be less than 20 cm (8 inches).

Regulatory Notes and Statements

Radio device, health and authorisation for use

Radio-frequency electromagnetic energy is emitted from the wireless devices. The energy levels of these emissions, however, are far much less than the electromagnetic energy emissions from wireless devices such as mobile phones. Radio devices are safe for use by consumers because they operate within the guidelines found in radio frequency safety standards and recommendations.

The use of the radio devices may be restricted in some situations or environments, such as:

- on board an airplane, or
- in an explosive environment, or
- in situations where the interference risk to other devices or services is perceived or identified as harmful.

In cases in which the policy regarding use of radio devices in specific environments is not clear (e.g., airports, hospitals, chemical/oil/gas industrial plants, private buildings), obtain authorization to use these devices prior to operating the equipment.

Regulatory Information/Disclaimers

Export restrictions

This product or software contains encryption code which may not be exported or transferred from the US or Canada without an approved US Department of Commerce export license. This device complies with Part 15 of FCC Rules, as well as ICES 003 B / NMB 003 B. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesirable operation.

Modifications not expressly authorized by Fujitsu may invalidate the user's right to operate this equipment.

ENERGY STAR Compliance

Your Fujitsu system is an ENERGY STAR qualified mobile PC. By choosing a computer with the latest energy-saving technology, you're helping to preserve our environment for future generations. ENERGY STAR is a joint program of the U.S. Environmental Protection Agency, U.S. Department of Energy, Natural Resources Canada, and other governments around the world helping us save money while protecting the environment through energy efficient products and practices. With energy costs and global warming top-of-mind for consumers, Fujitsu is committed to offering solutions that help consumers conserve energy and improve the quality of our environment.

Sleep Mode:

You will notice that your computer is initially set so that the display turns off after 15 minutes of user inactivity, and the computer goes into Sleep mode after 20 minutes of user inactivity. When going into Sleep mode, the computer also reduces the speed of any active Ethernet network links. To "wake" the computer from Sleep mode, press the Suspend/Resume Button.

Energy saving benefits:

Fujitsu ENERGY STAR qualified mobile PCs use about half as much electricity as standard equipment – saving half in utility costs. But more than that, ENERGY STAR also makes a difference for the environment. Did you know that the average house can be responsible for twice the greenhouse gas emissions as the average car? That's because every time you flip on a light switch, run your dishwasher, or turn on your PC, you use energy, which means more greenhouse gas emissions from power plants. So the more energy we can save through energy efficiency, the more we help to reduce greenhouse gases and the risks of global warming.

To learn more about the important ENERGY STAR program, visit:"www.energystar.gov".

To read about how Fujitsu is supporting Sustainable Management along with several other environmental activities, visit the Fujitsu Corporate Citizenship page at: "http://www.computers.us.fujitsu.com/www/content/aboutus/environmental/environment.php".

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